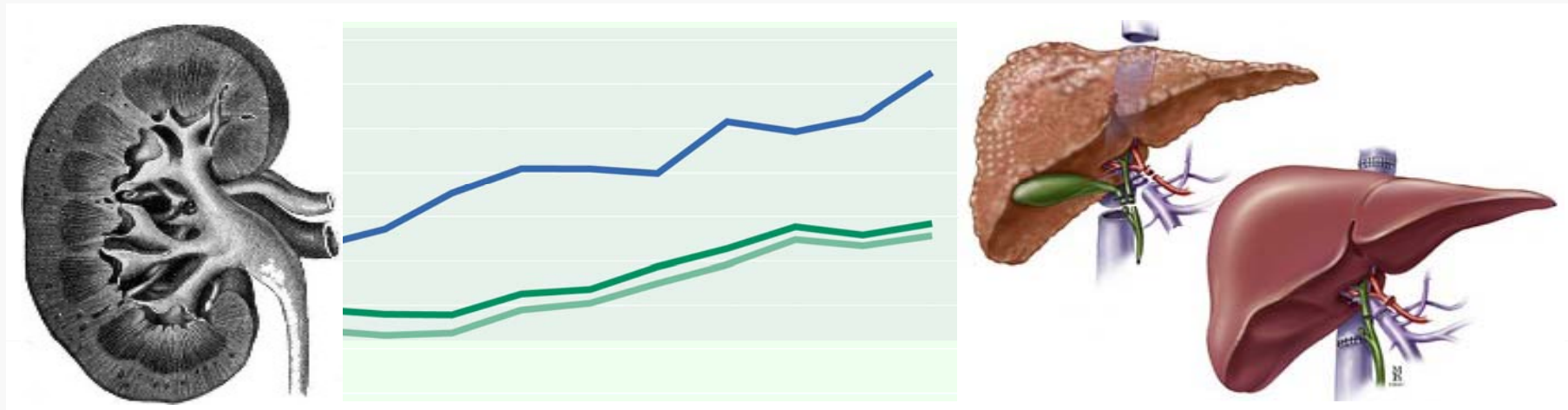


Medizinischen Möglichkeiten der Organtransplantation und aktueller und künftiger Bedarf an Spenderorganen



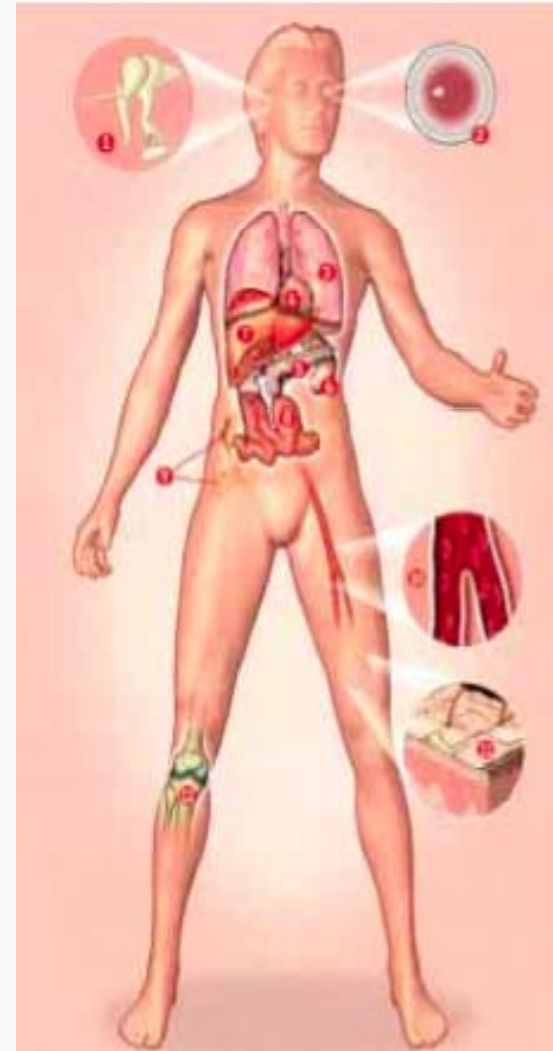
Prof. Dr. P. Neuhaus

Klinik für Allgemein-, Viszeral- und Transplantationschirurgie
Charité – Universitätsmedizin Berlin, Campus Virchow-Klinikum

Transplantierbare Organe - etablierte und experimentelle Verfahren

- **Leber** **vermittlungspflichtige Organe***
 - **Niere**
 - **Herz**
 - **Lunge**
 - **Pankreas**
 - **Dünndarm**
-
- **Extremitäten**
 - **Haut/Gesicht**
 - **Kehlkopf**
 - **Herzklappen**
 - **Haut**
 - **Kornea**
 - **Gehörknöchel**
 - **Blut**

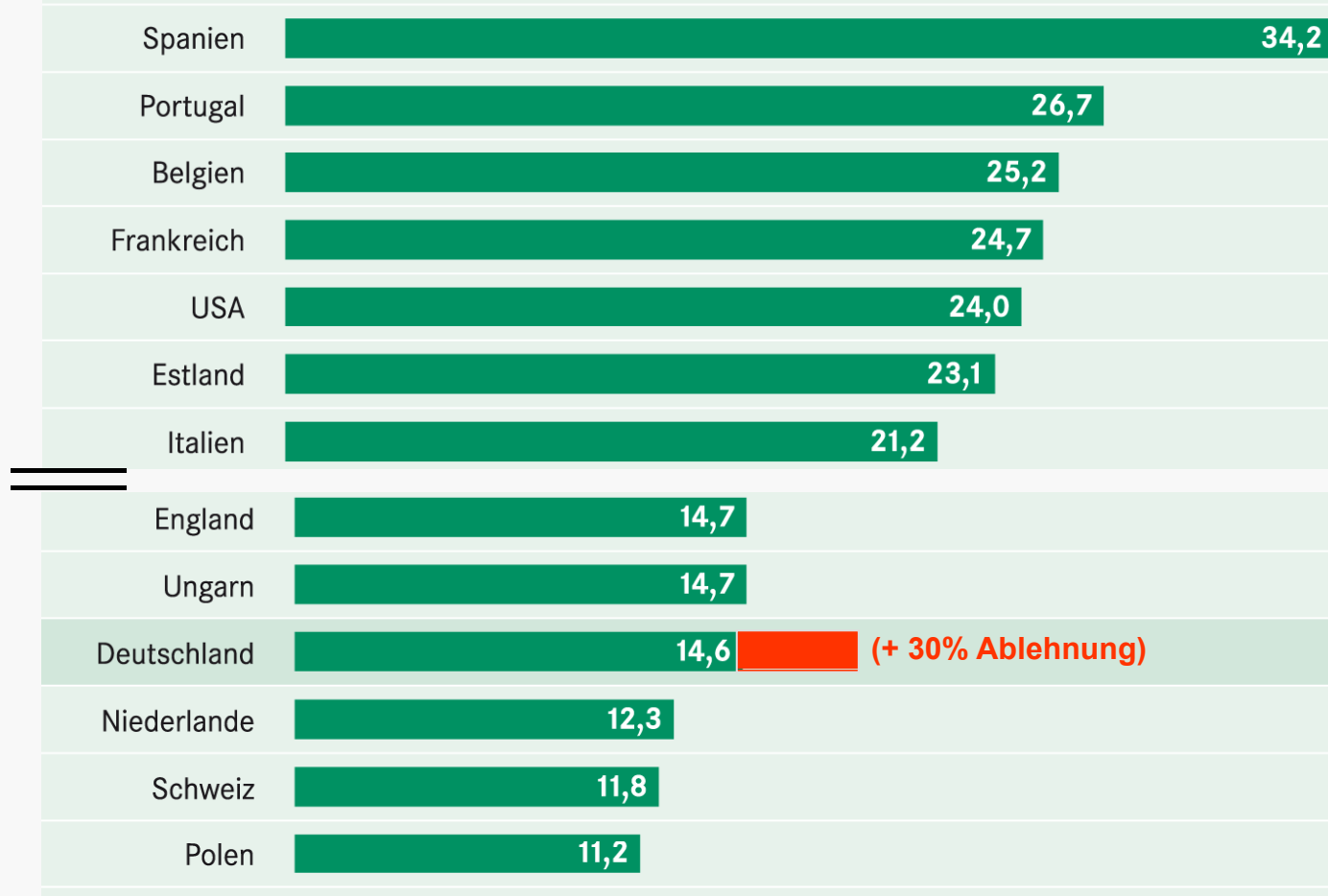
* Eurotransplant:
Deutschland,
Österreich,
Niederlande,
Belgien,
Luxemburg,
Slowenien,
Kroatien



Internationaler Vergleich

Postmortale Organspender 2008

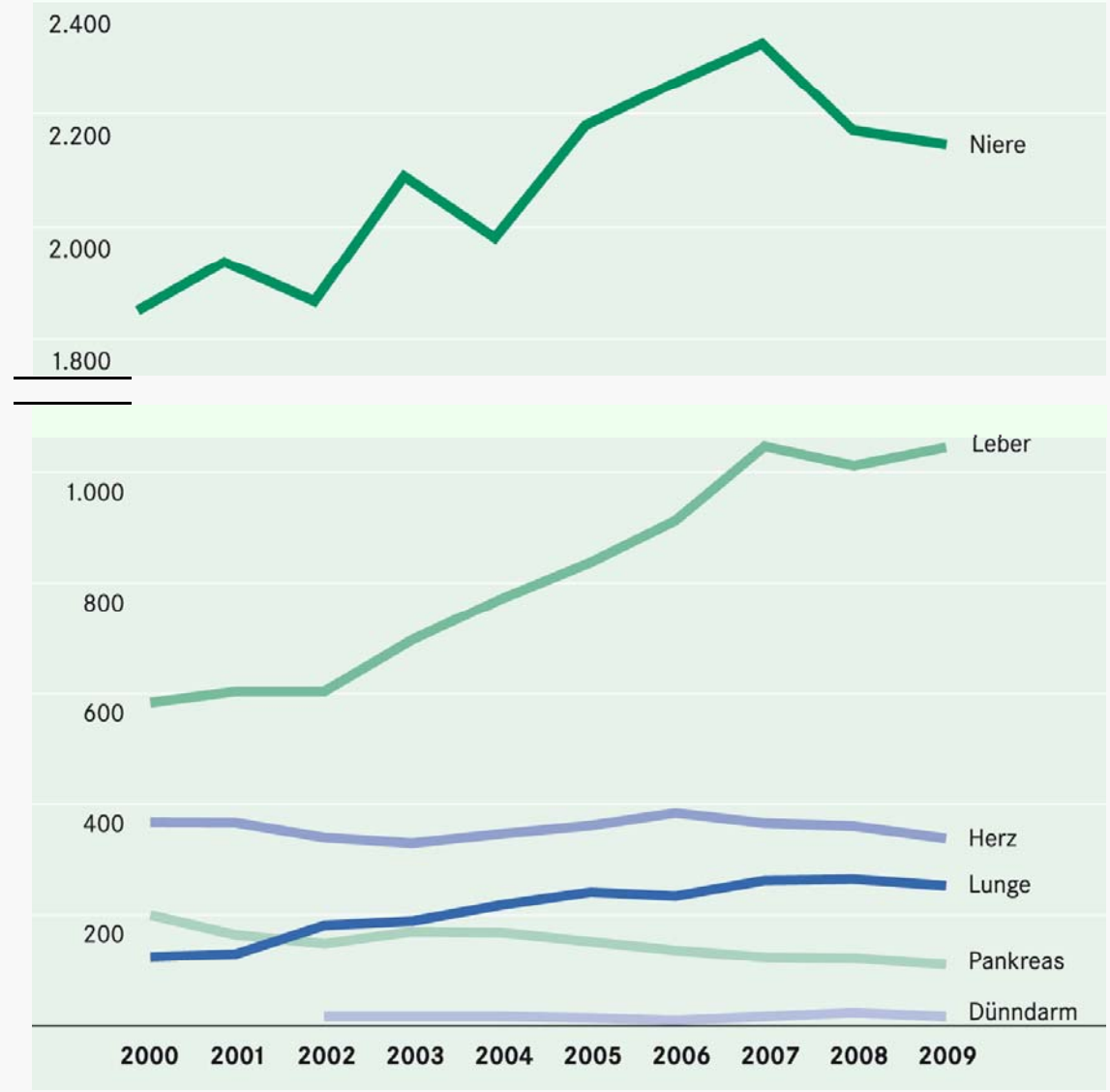
ANZAHL PRO MIO. EINWOHNER



2009 DEUTSCHLAND

Postmortal entnommene und transplantierte Organe

ANZAHL

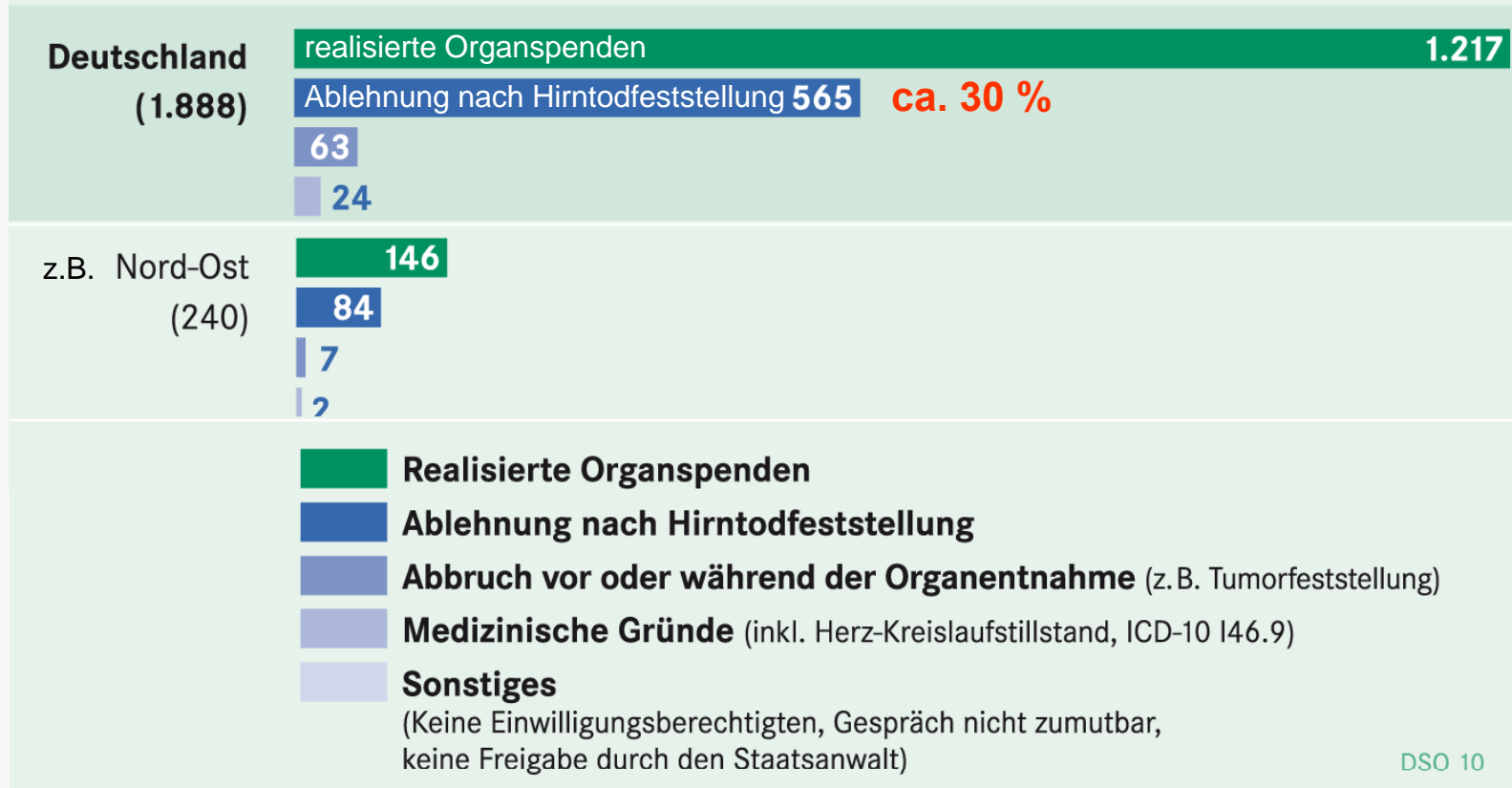


2009 DEUTSCHLAND

Potenzielle Organspender (Ergebnisse)



ANZAHL



2009 DEUTSCHLAND

Todesursachen der Organspender

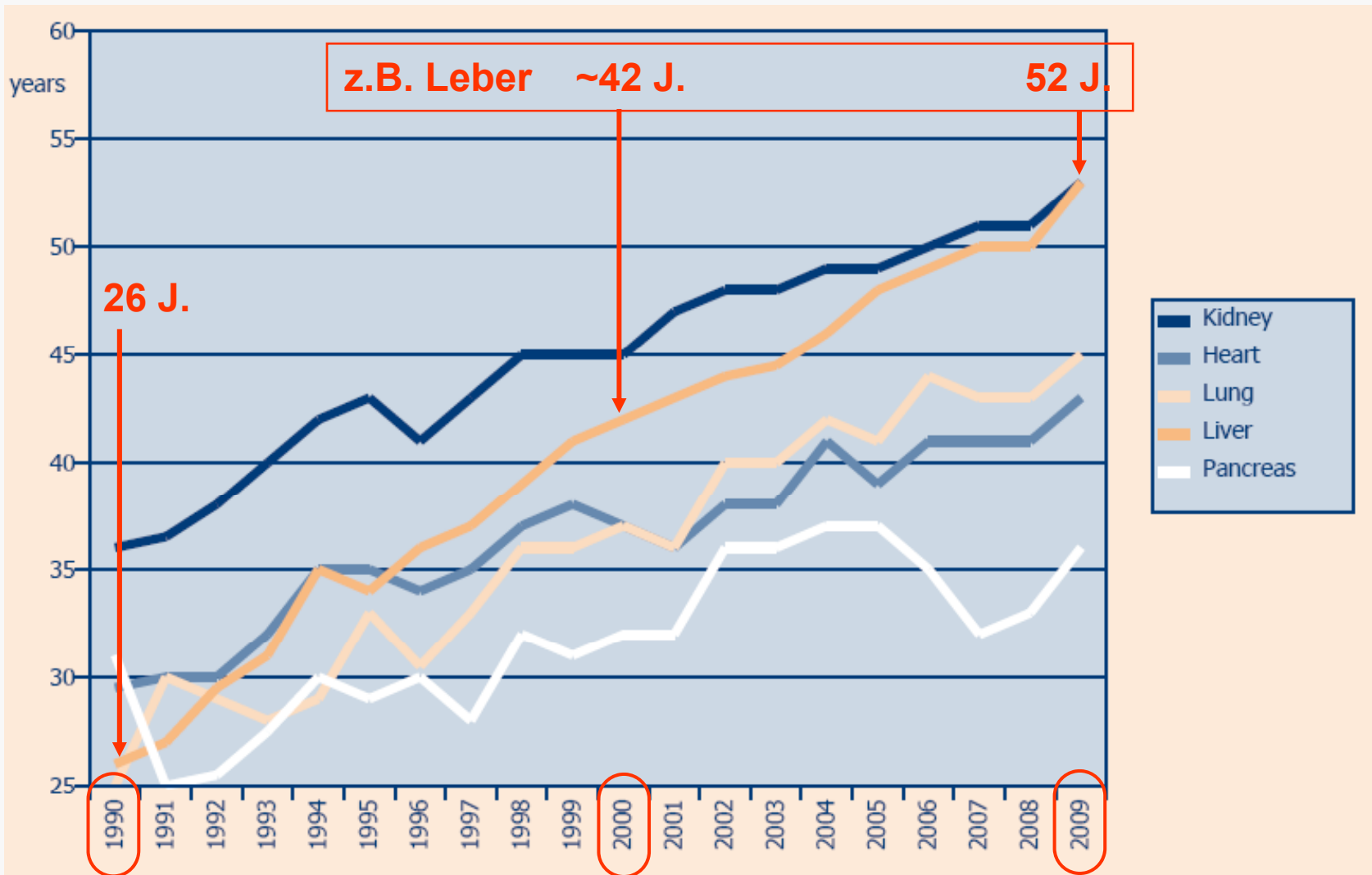


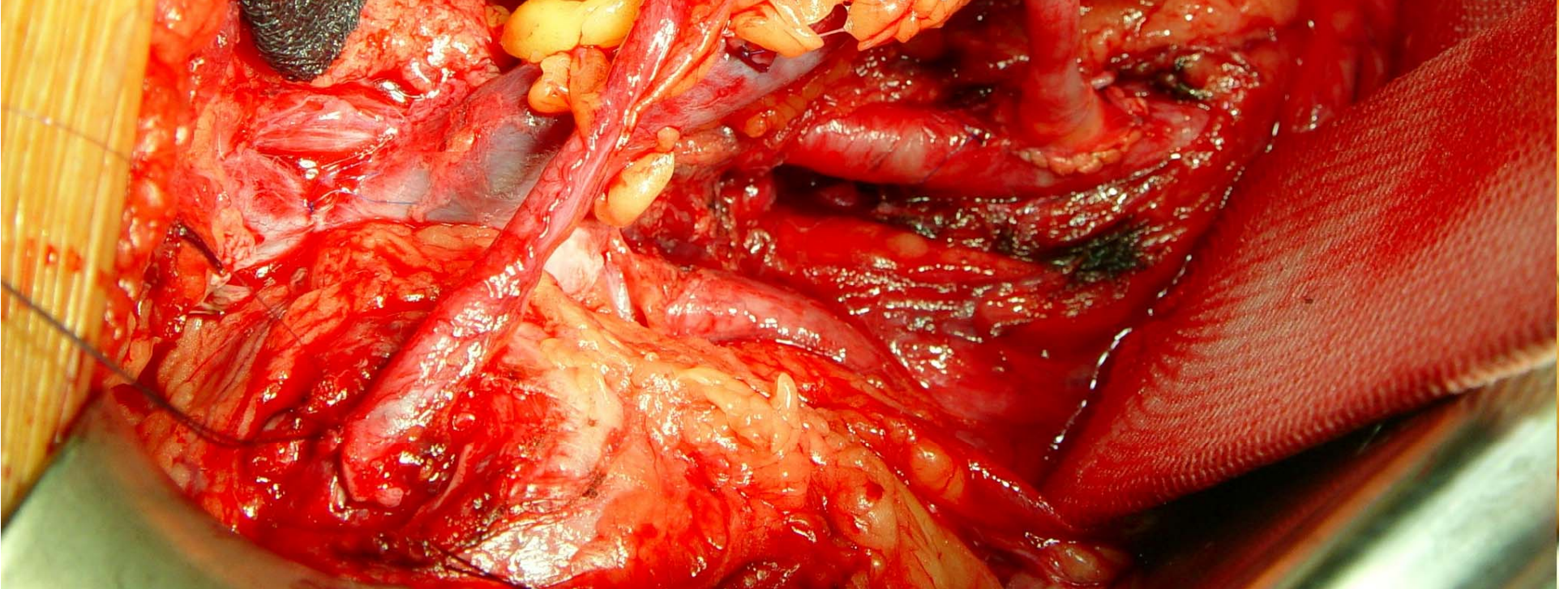
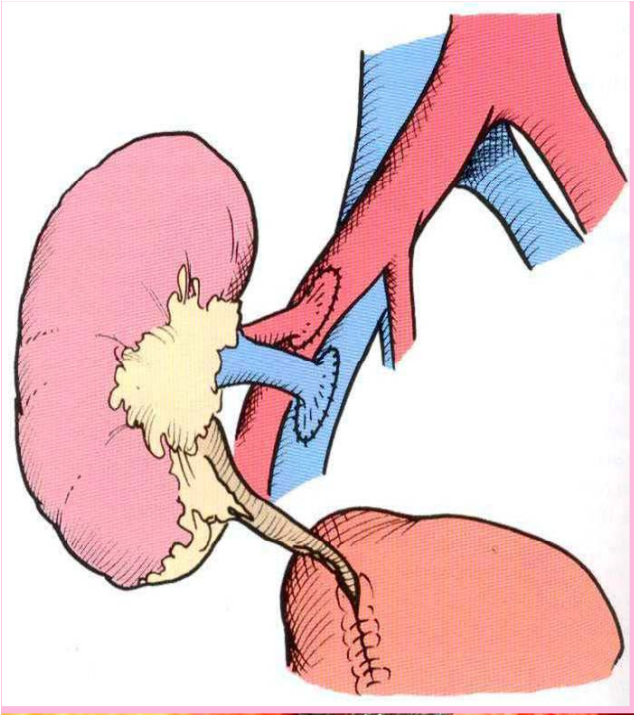
ANZAHL, PROZENTUALER ANTEIL

Intrakranielle Blutungen	709 (58,3%)
Schädelhirntraumen	178 (14,6%)
Ischämisch-hypoxische Hirnschäden	166 (13,6%)
Hirnfarkte	156 (12,8%)
Entzündliche Hirnschäden	5 (0,4%)
Primäre intrakranielle Tumore	3 (0,2%)

n = 1.217

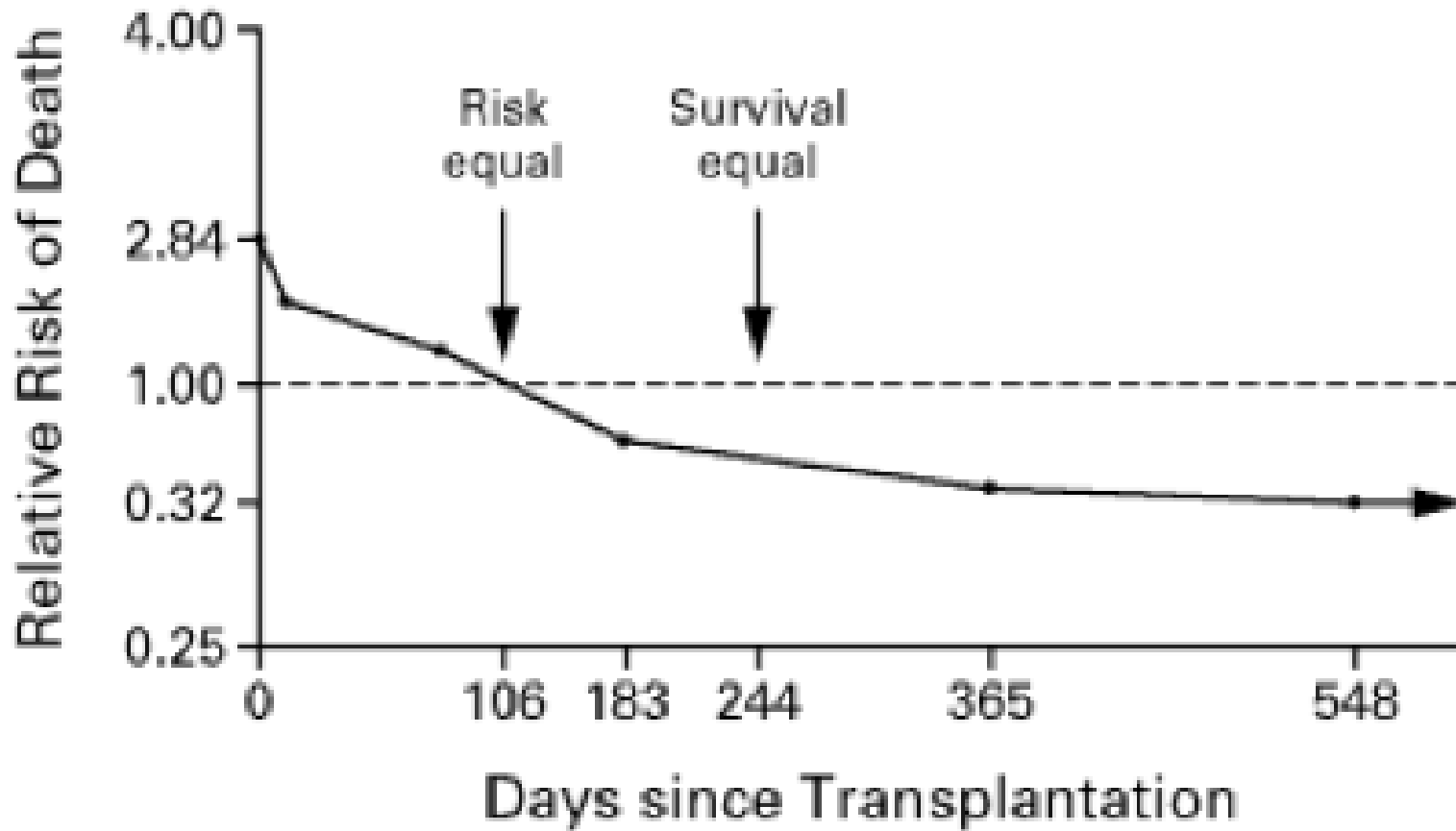
Eurotransplant: medianes Spenderalter





Nierentransplantation

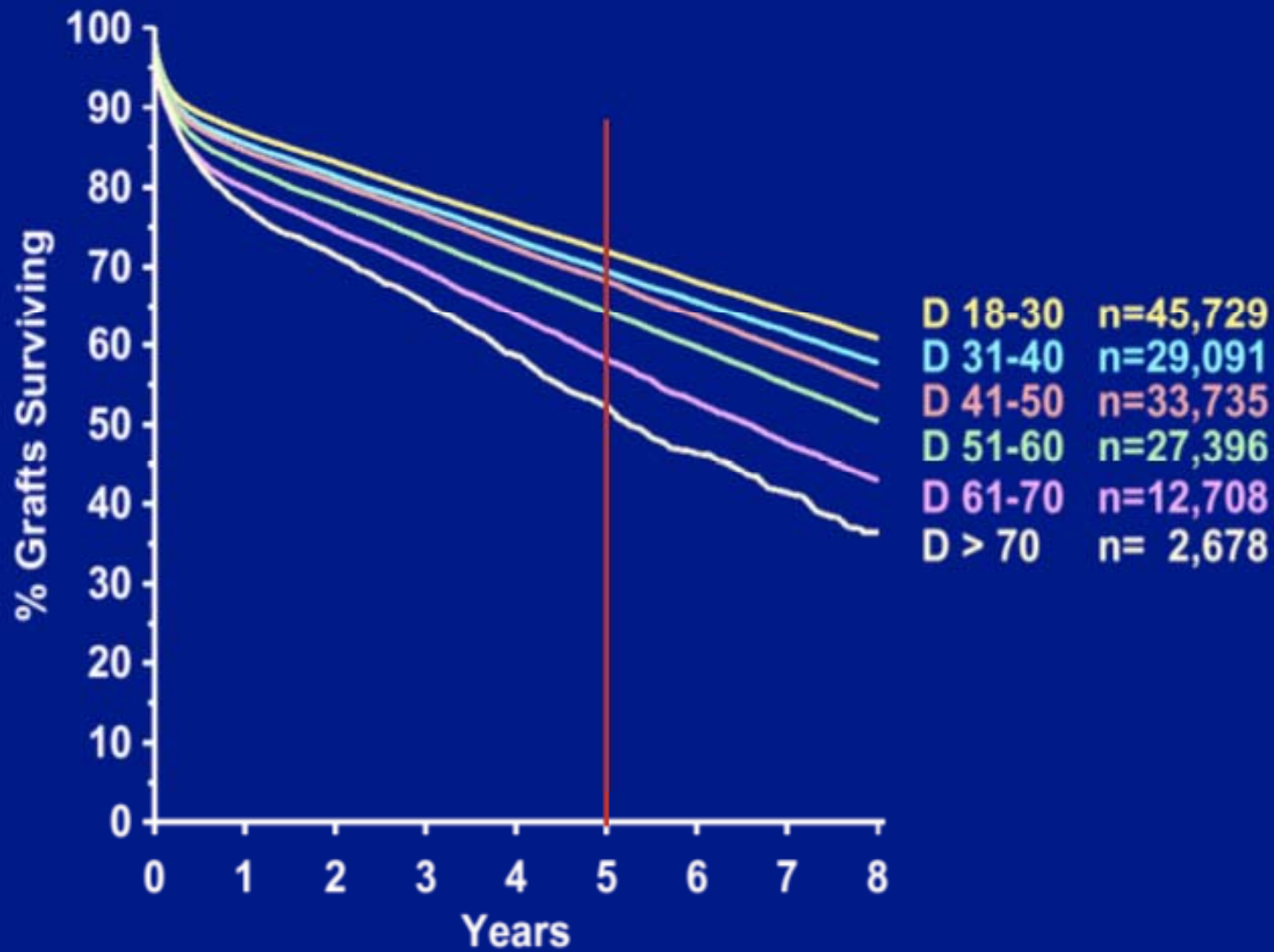
Mortalität - Dialyse versus NTX



Wolfe et al. NEJM. 1999; 341:1725-30

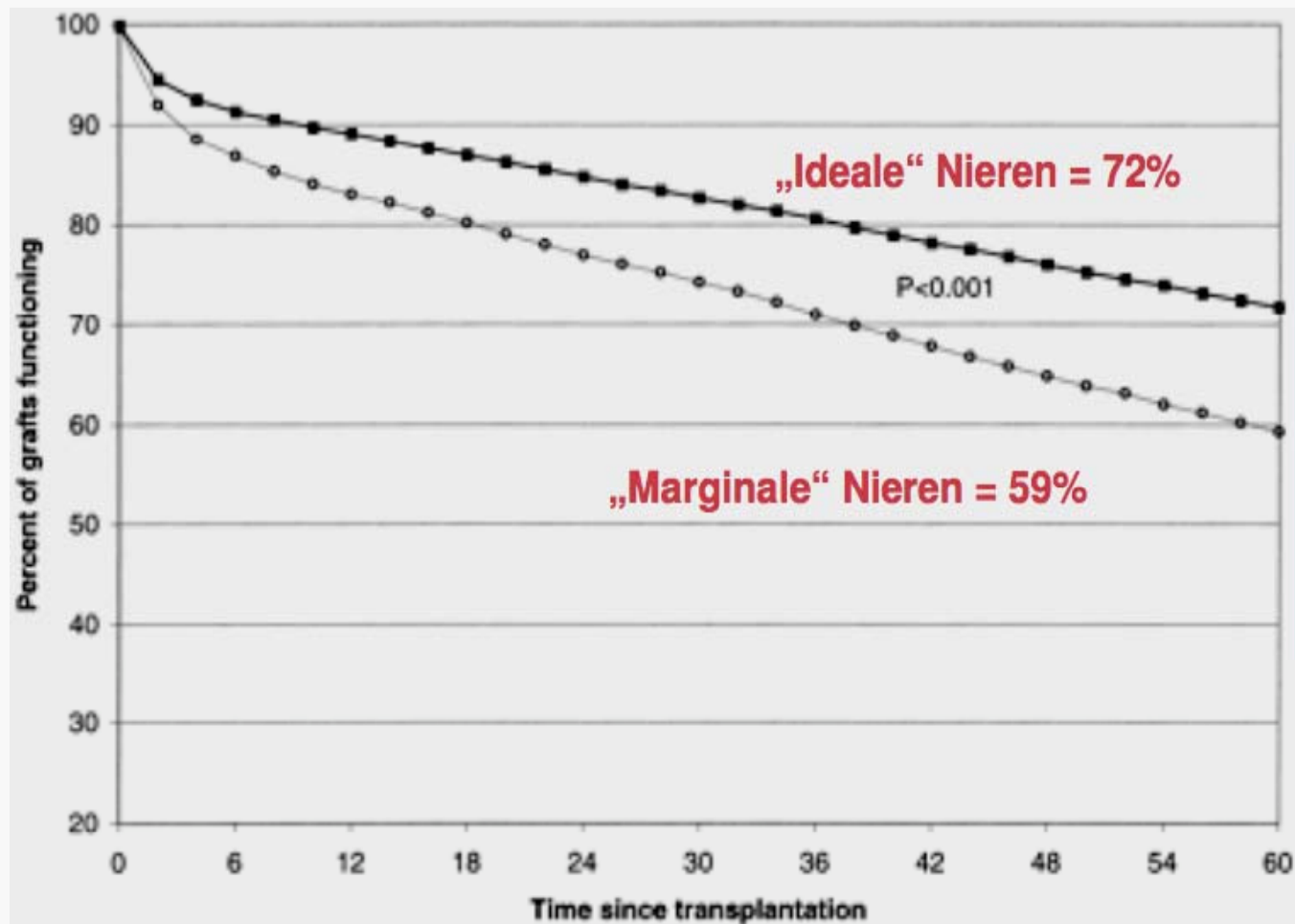
Donor Age

First Cadaver Kidney Transplants 1985-2004

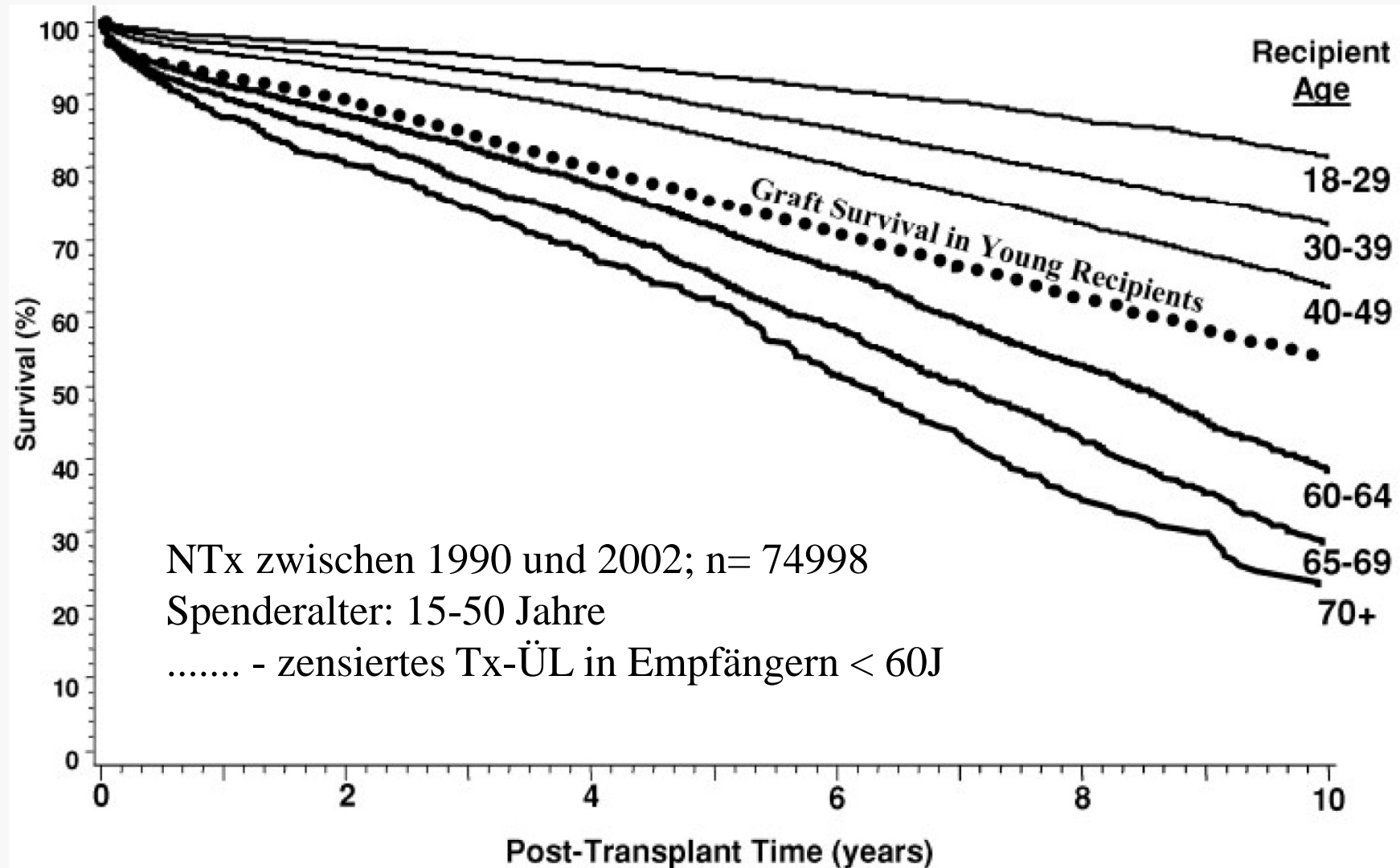


Nierentransplantatüberleben

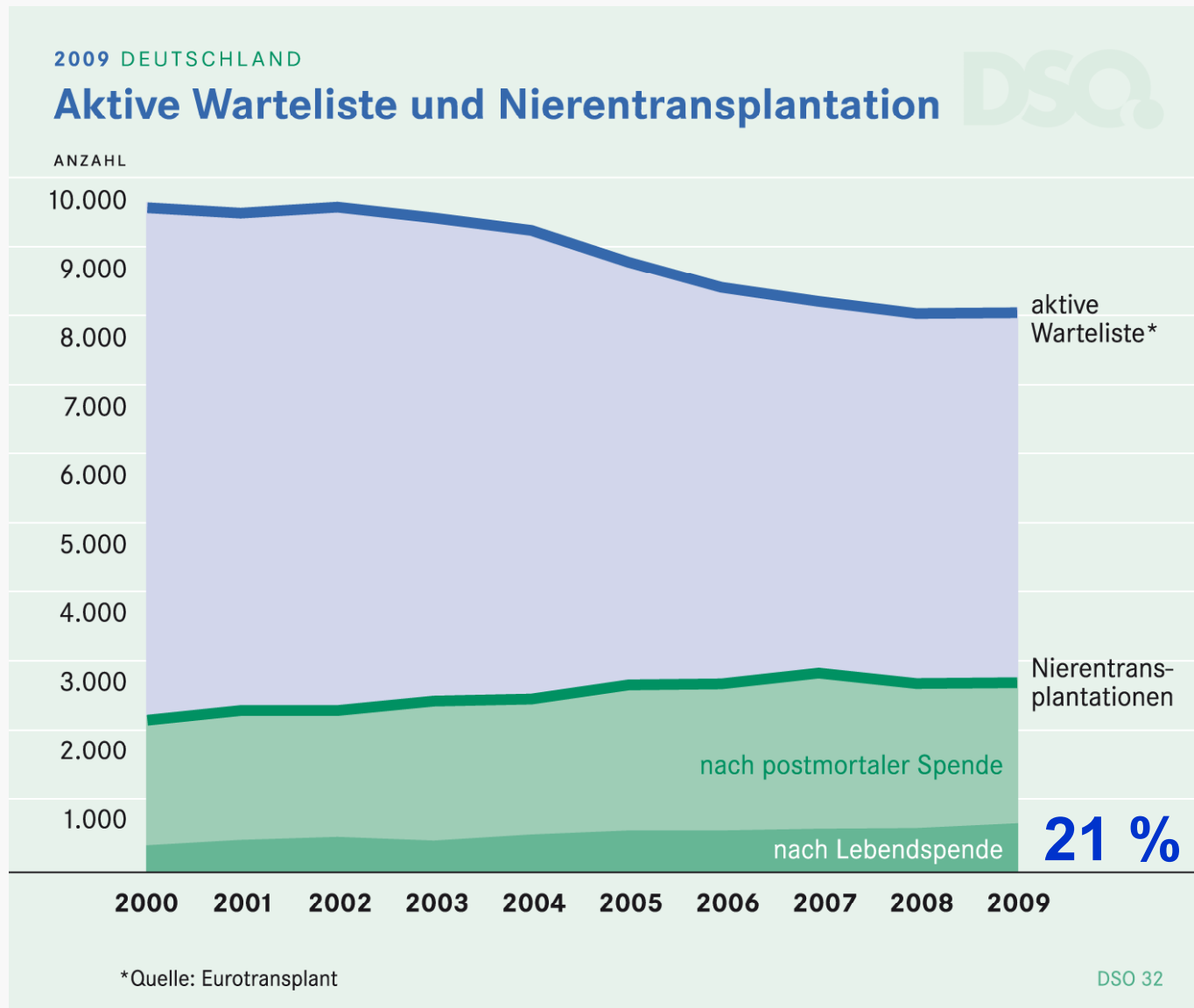
Einflußfaktoren



Empfängeralter - Transplantatüberleben

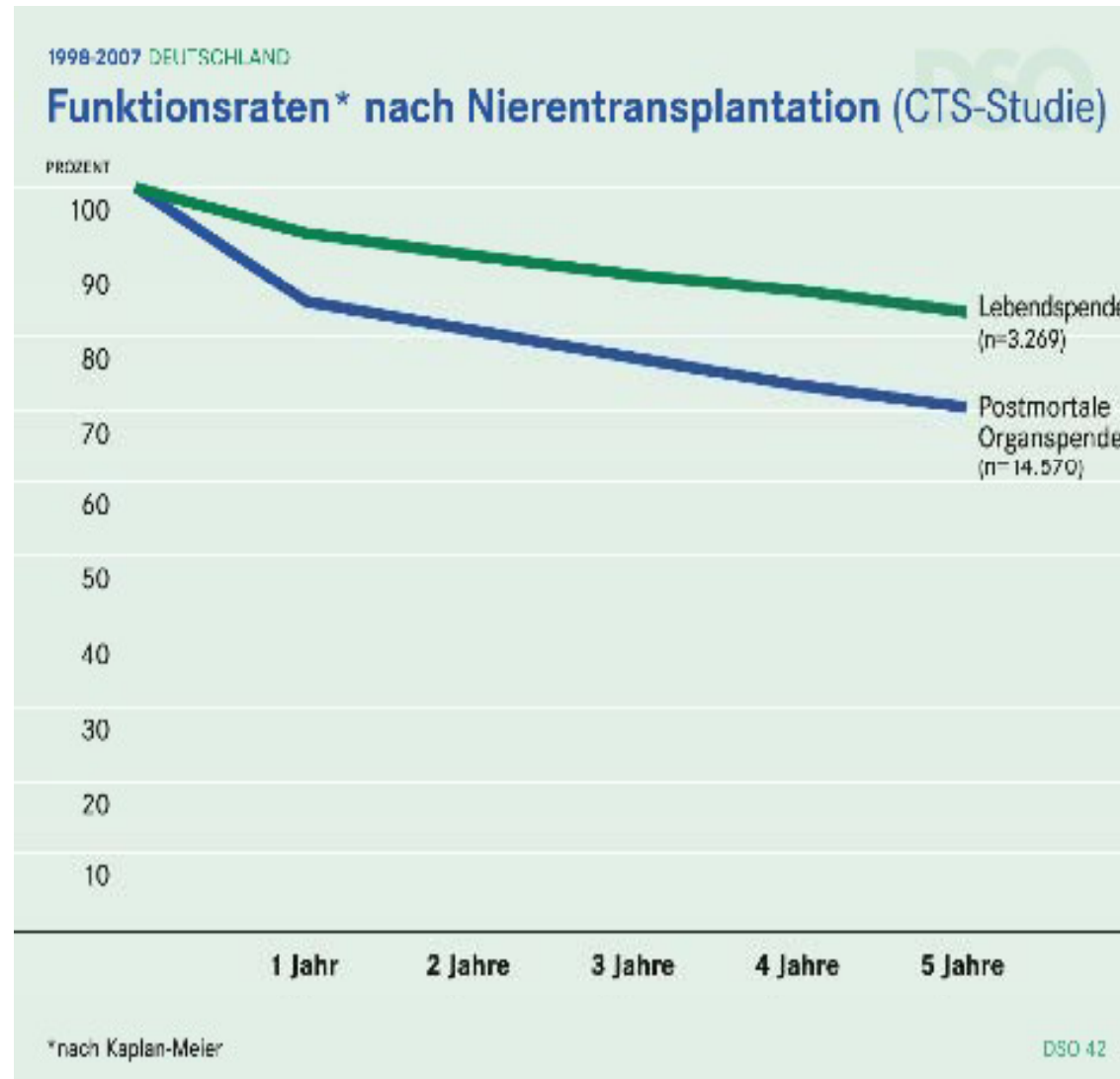


Nierentransplantation



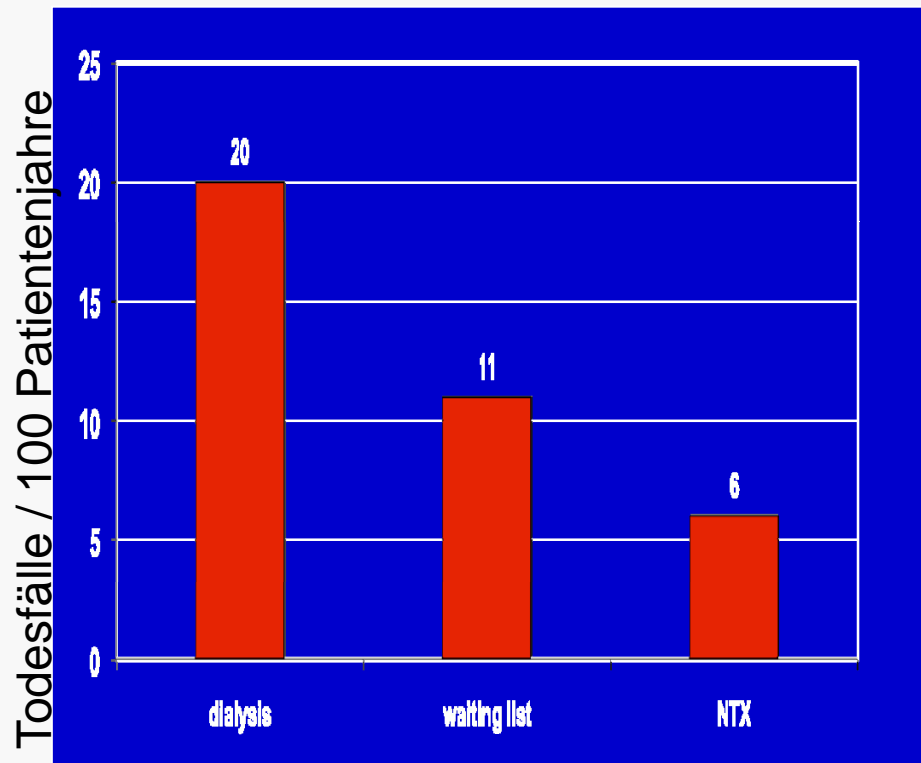
Nierentransplantation

Transplantatüberleben

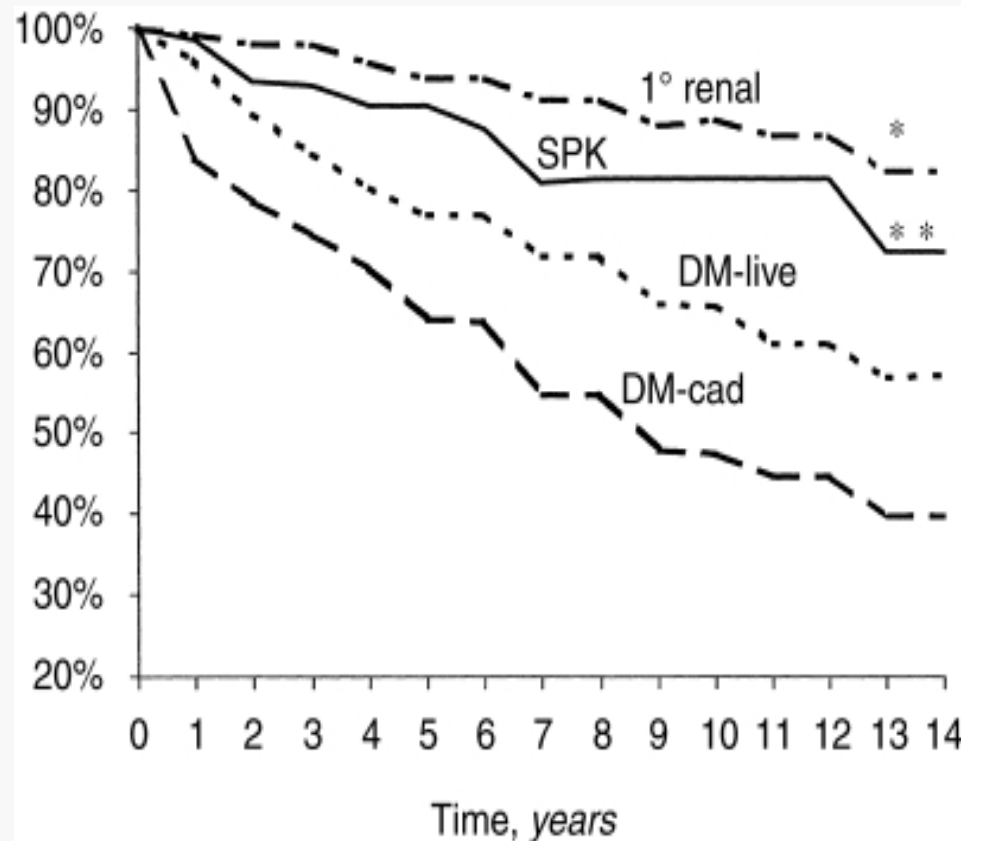


Diabetes mellitus: Todesfälle pro 100 Patientenjahre

Dialyse vs NTX-(Beobachtungsperiode 1991-1997)

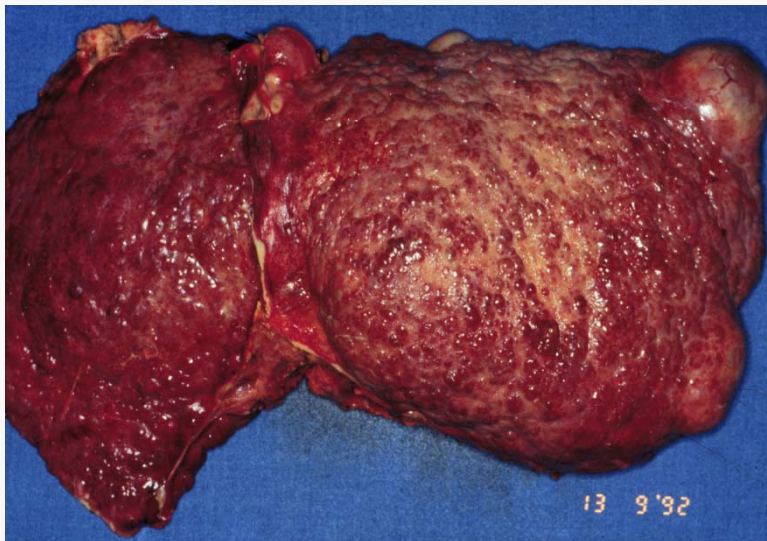


Wolfe, NEJM 341 (1999) 1725

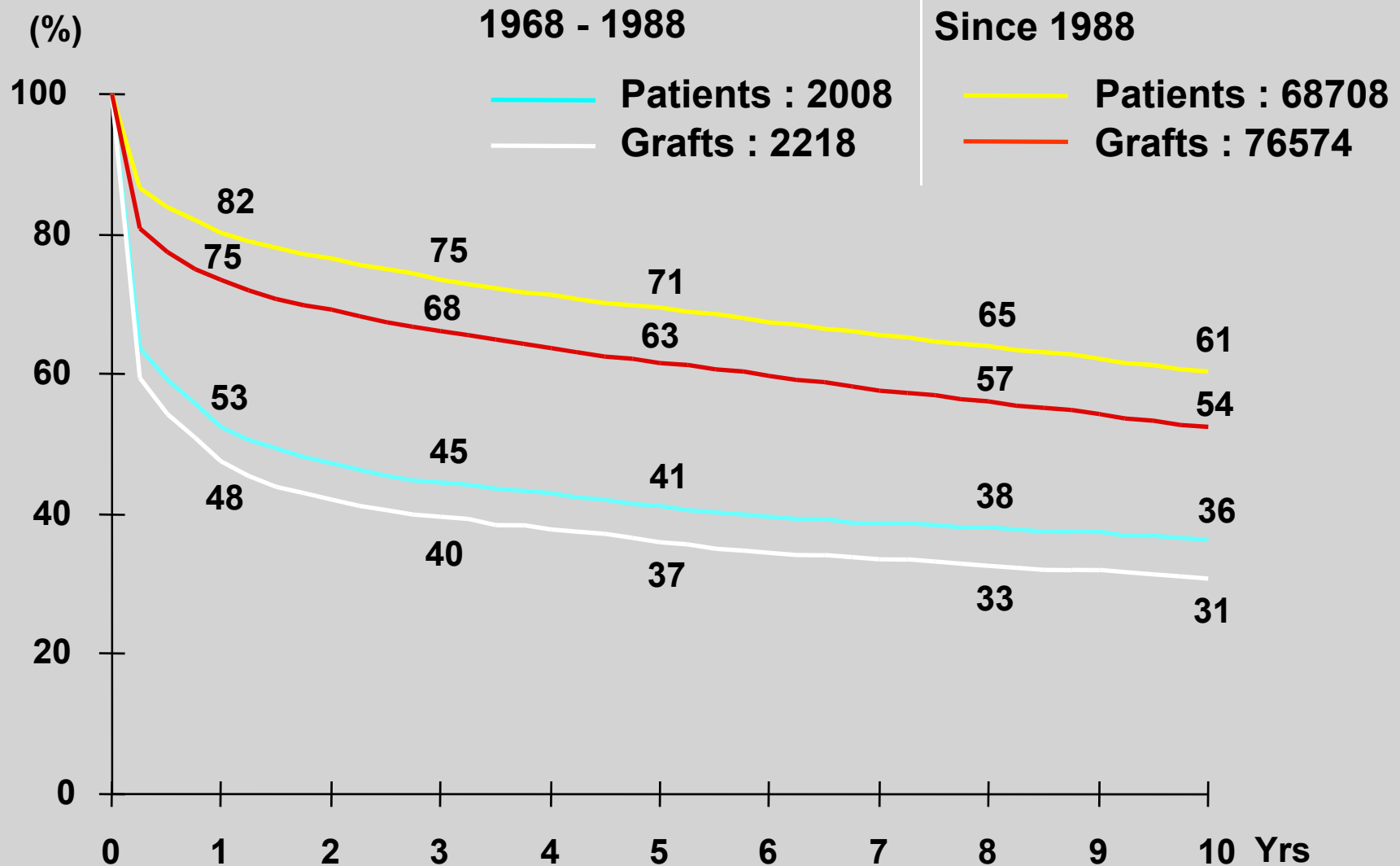


Indikationen zur Lebertransplantation

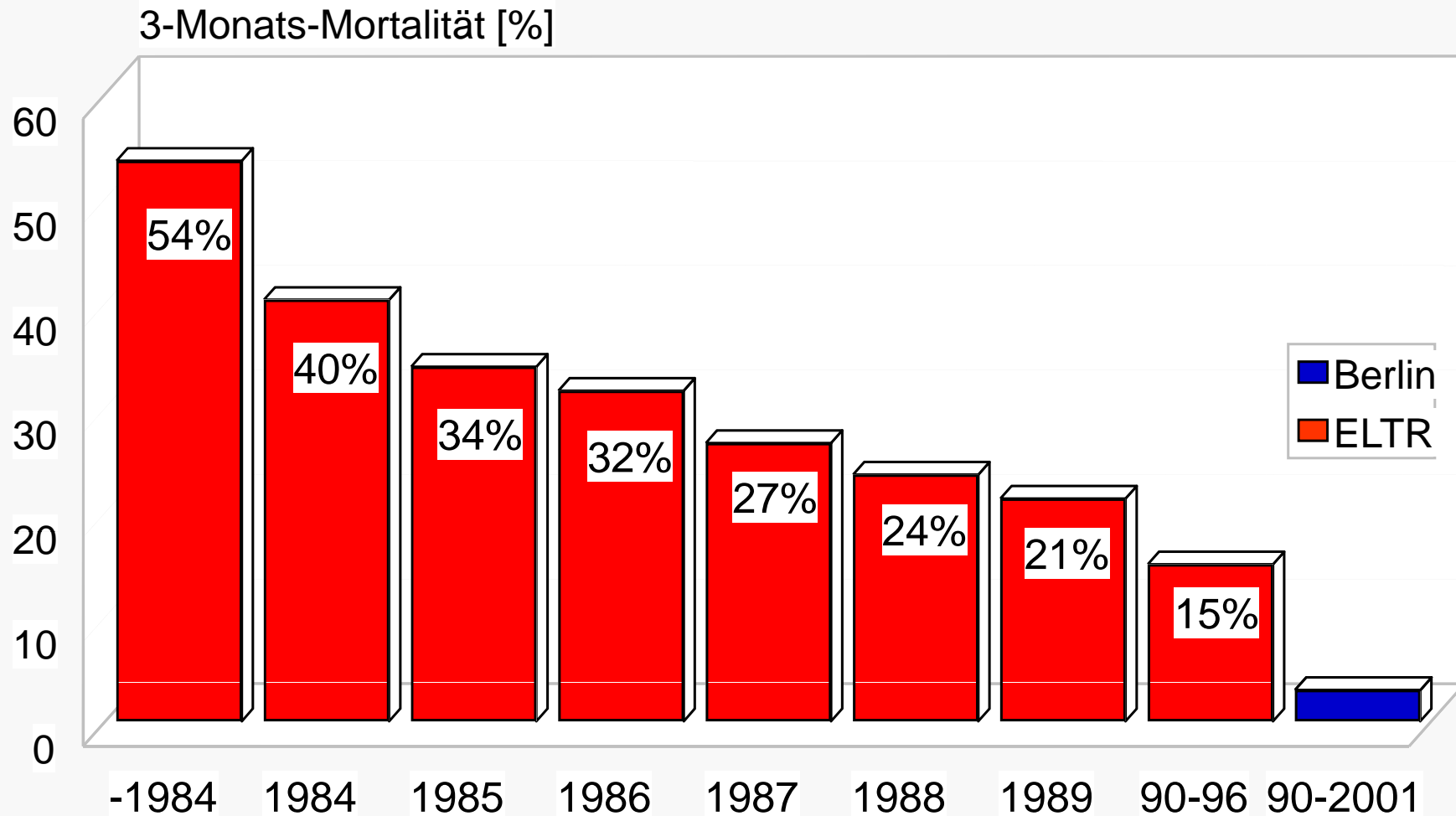
- Akutes Leberversagen (Toxisch, hepatitisch)
- Fortgeschrittene Leberzirrhose Child B/C
- Primäre Leberzelltumore



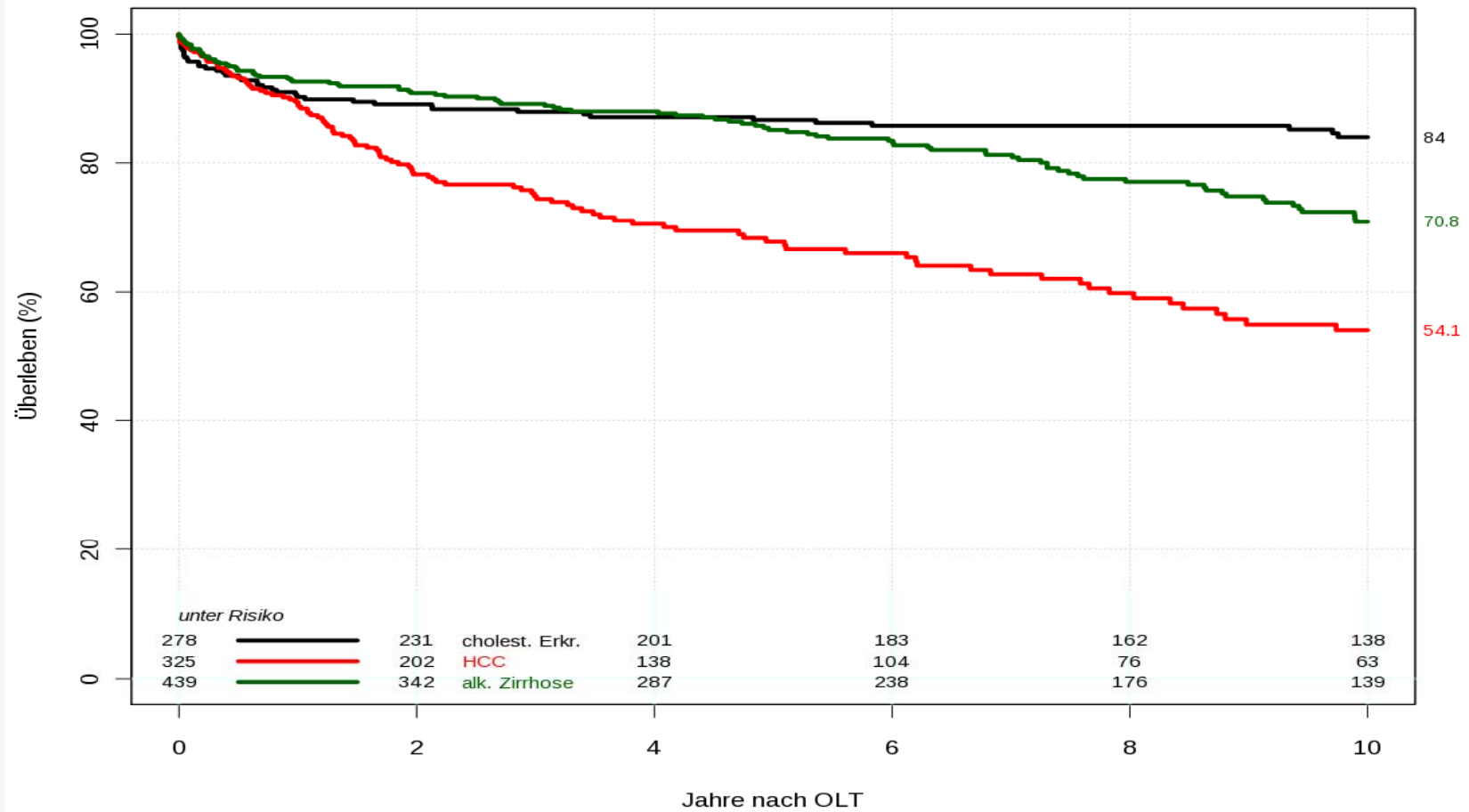
Patient and Graft Survival following Liver Transplantation (05/1968 – 12/2007)



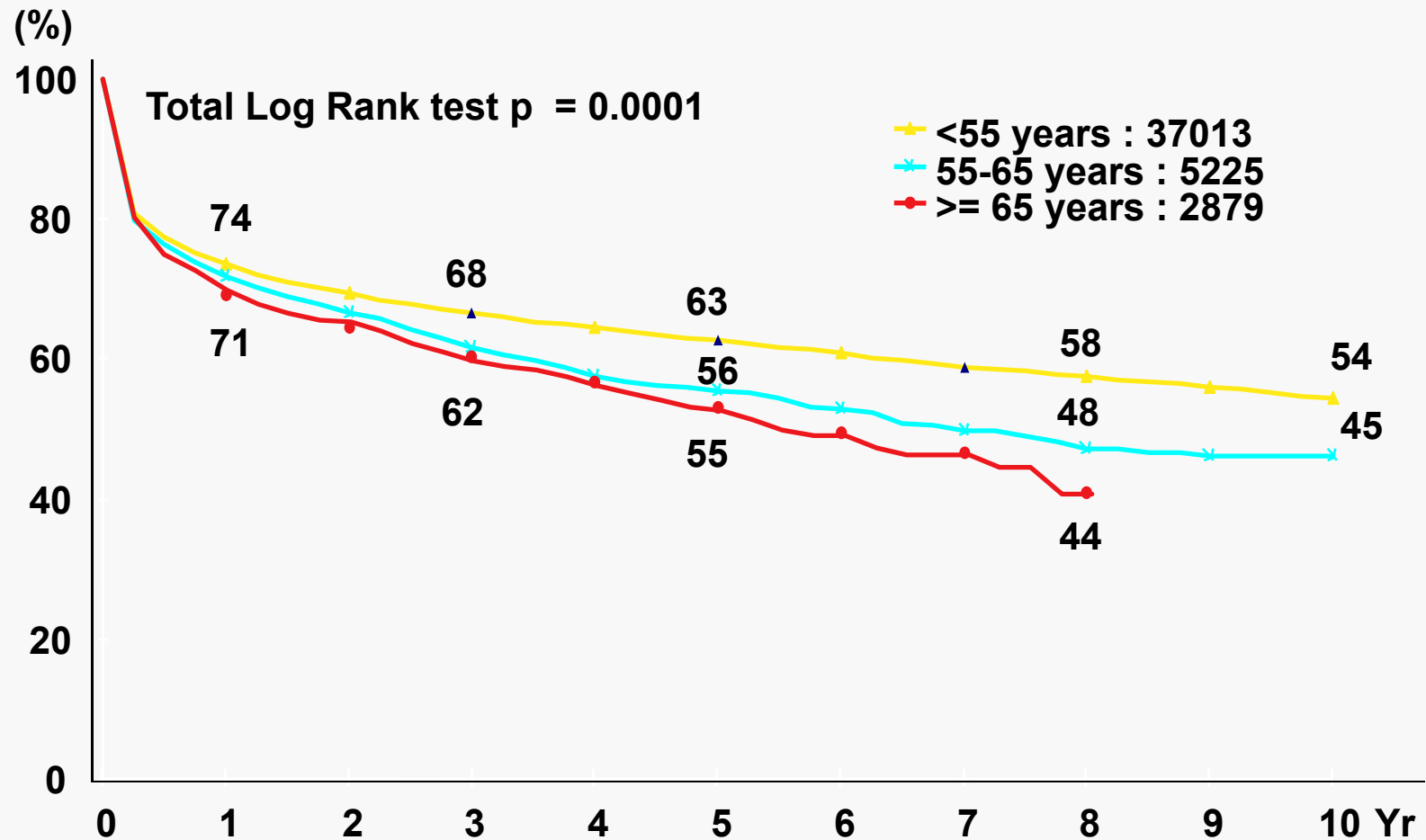
Perioperative Mortalität nach Lebertransplantation



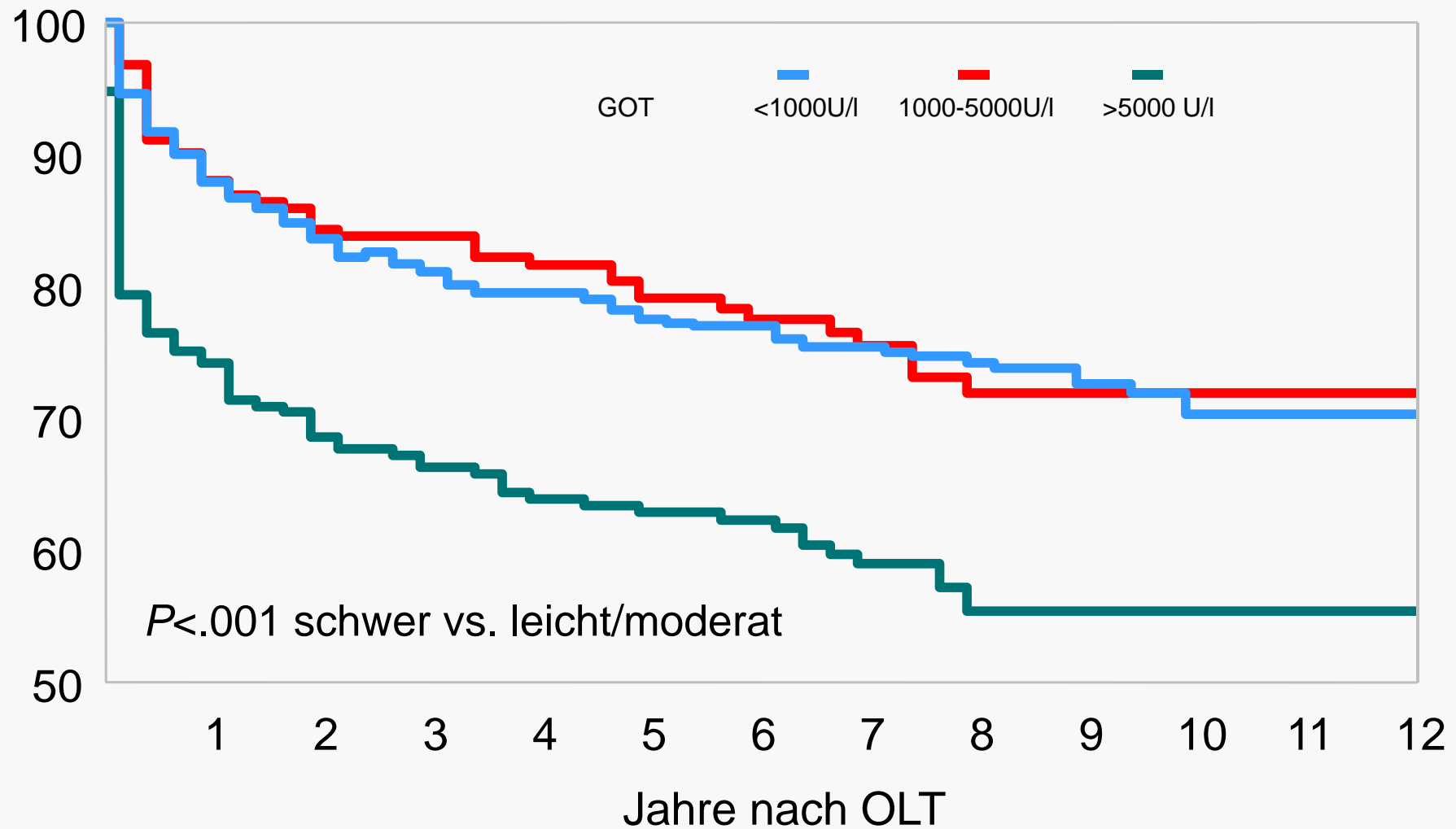
Ergebnisse in Berlin



Graft Survival according to Donor Age in Europe 01/1988 - 06/2003



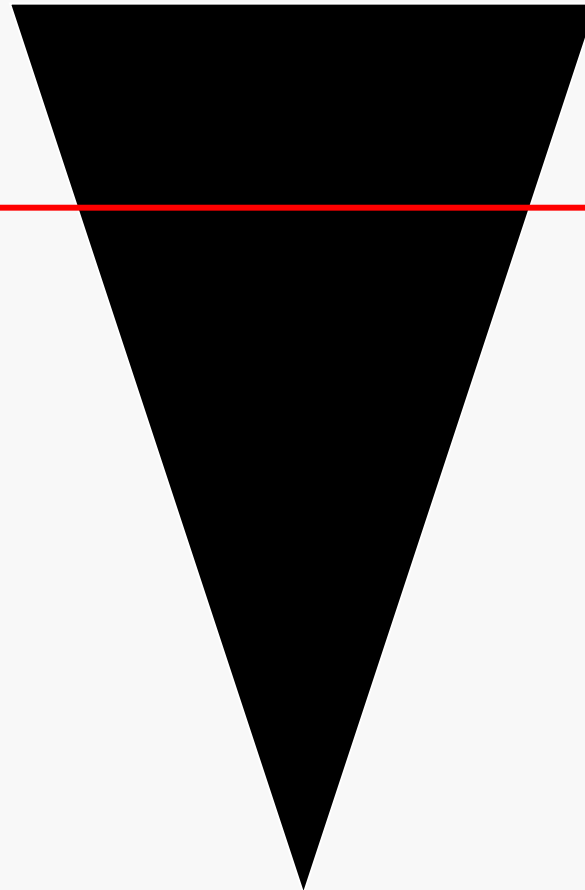
Transplantatüberleben in Abhängigkeit der initialen I/R Schädigung



Kriterien für die Allokation von Lebern: Transplantationsgesetz (TPG)

3- Monats-Mortalität

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%



MELD

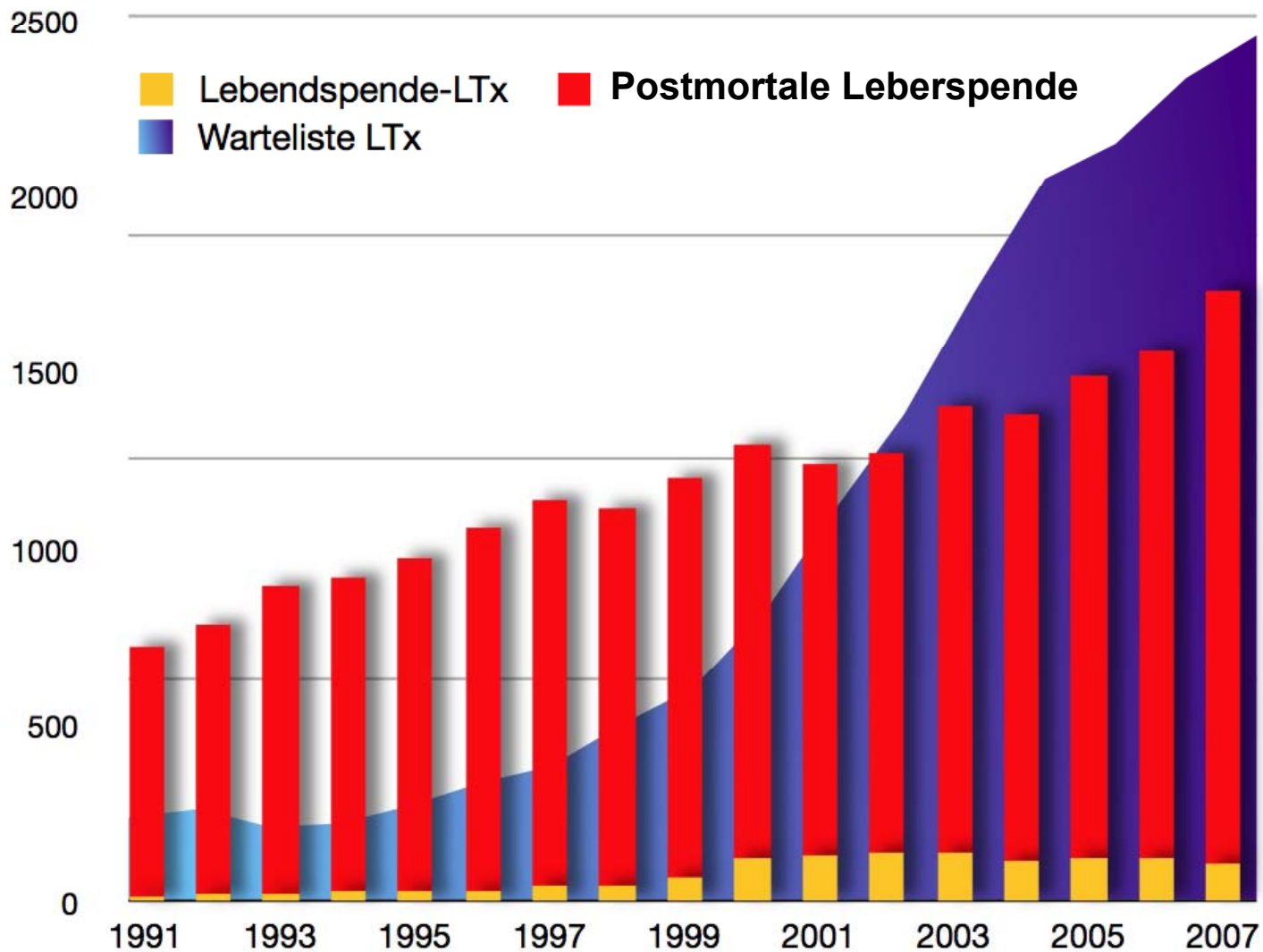
40
30
20
10
0



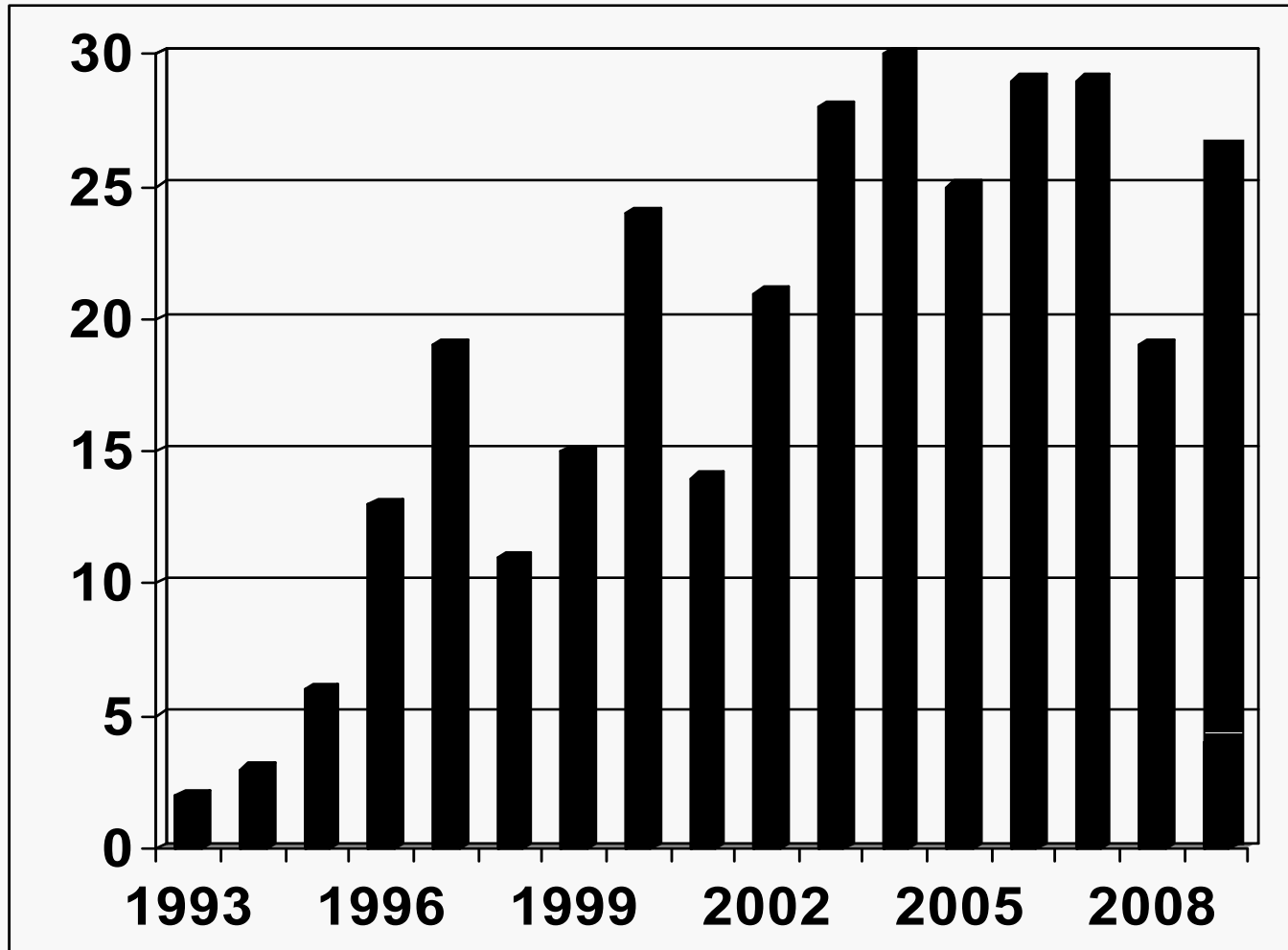
**Model of End-Stage
Liver disease**
- Kreatinin
- INR
- Bilirubin

Grenzen der Lebertransplantation

Organmangel im Eurotransplant Bereich

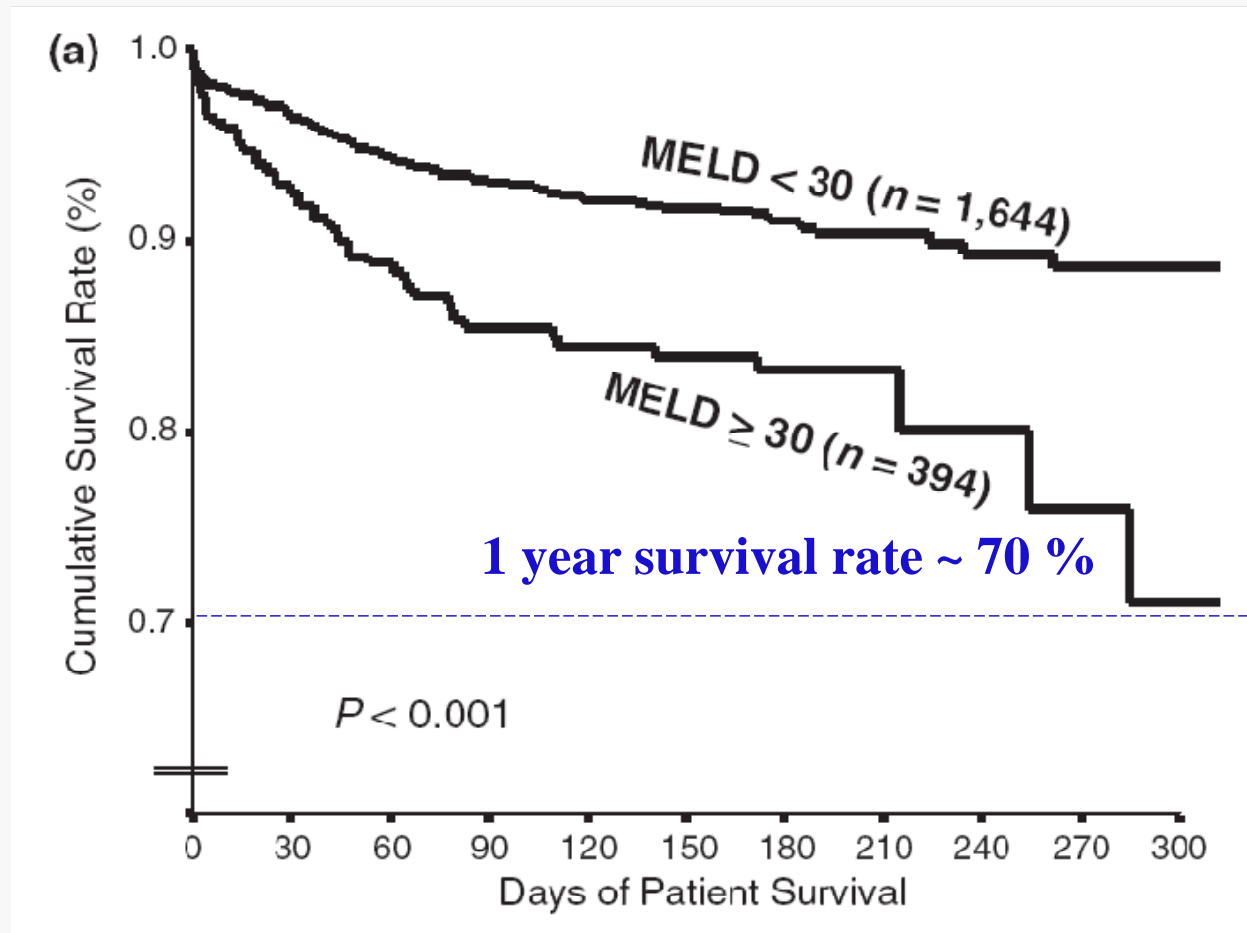


Mortalität auf der Warteliste in Berlin



Postoperatives Überleben mit einem MELD (≥ 30)

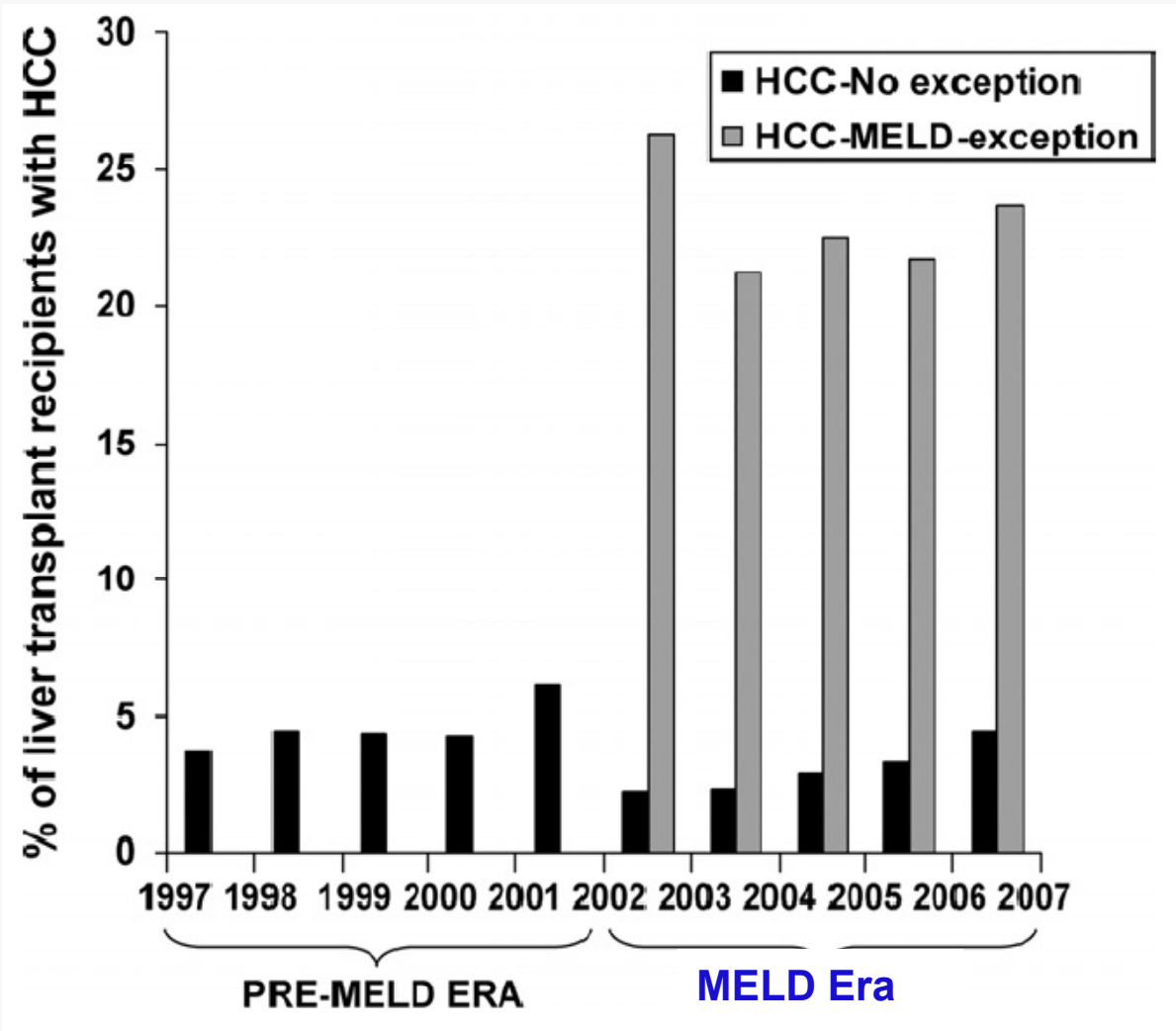
UNOS data 03/2002 – 12/2002



MELD ≥ 30 :

**12 % of the
total population
(394 / 3227)**

Except Meld beim HCC in den USA: UNOS

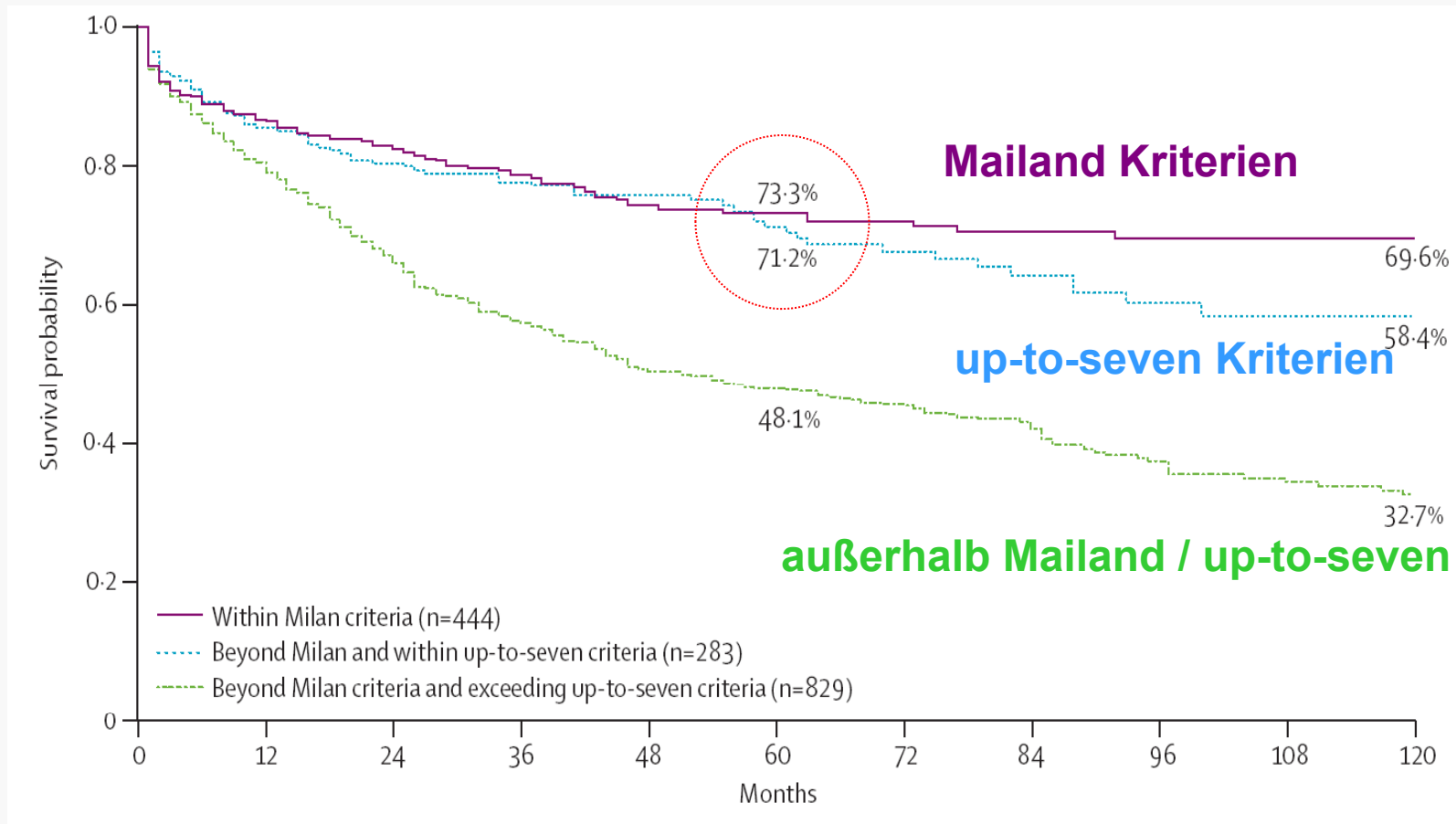


**6-fach häufiger
Lebertrans-
plantationen beim
HCC in den USA**

*Ioannou GN ,
Gastroenterology 2008*

Predicting survival after liver transplantation in patients with hepatocellular carcinoma beyond the Milan criteria: a retrospective, exploratory analysis

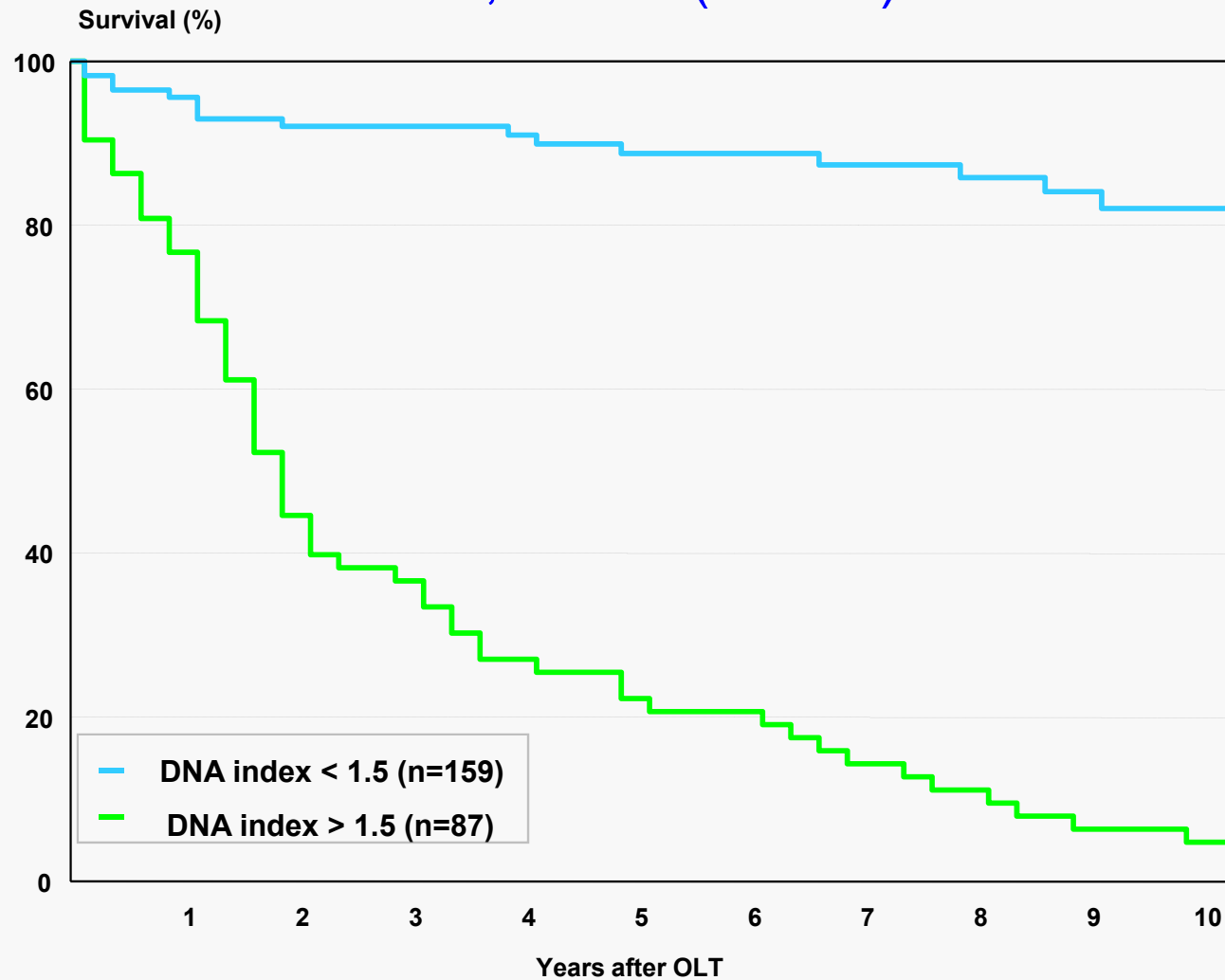
(Analyse der Daten von 1556 Patienten aus 36 Zentren)



Mazzaferro et al., Lancet Oncol 2009

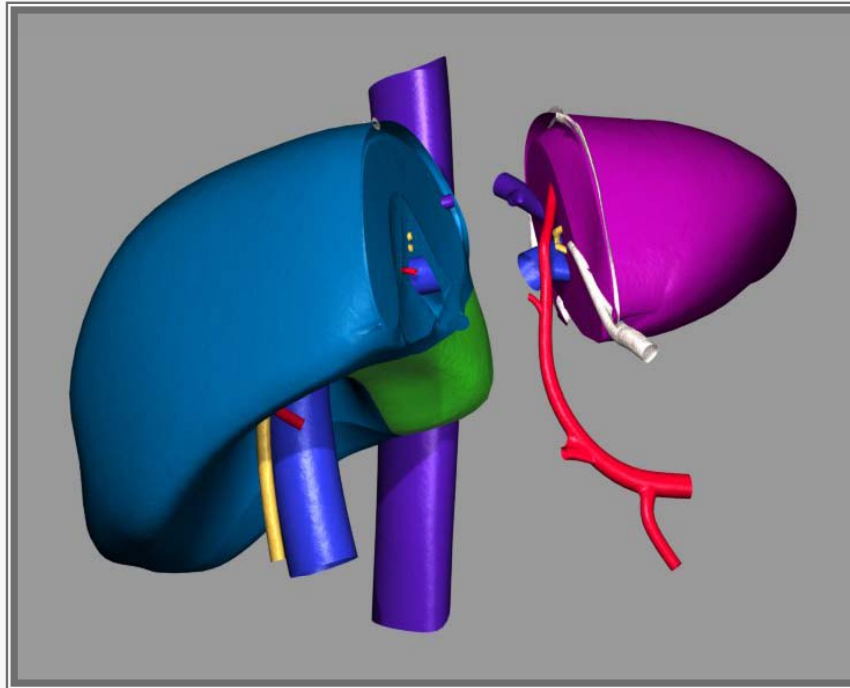
Patienten survival after OLT and DNA-Index

Charité, Berlin (n=246)



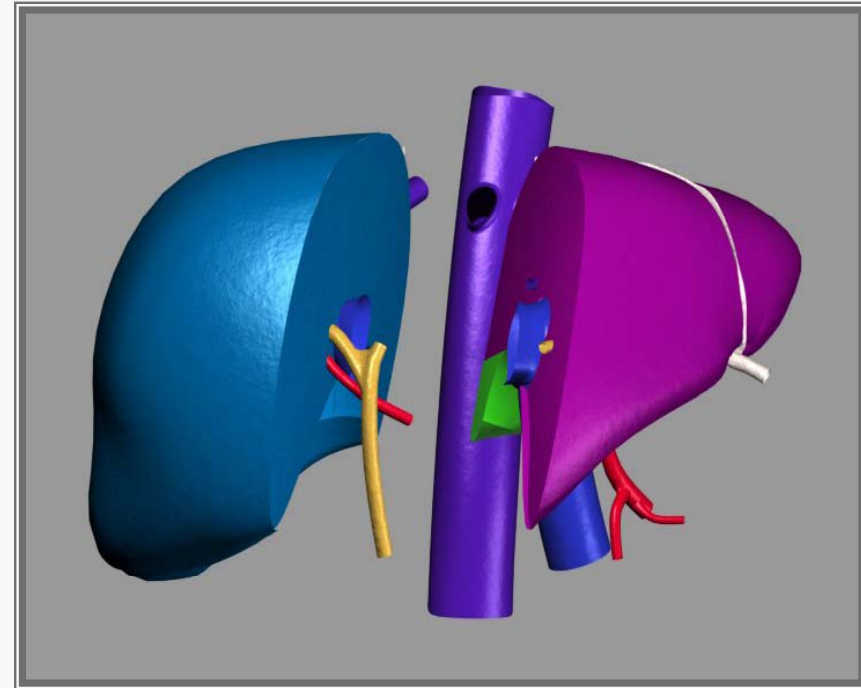
Split-Lebertransplantation

Varianten



"Reduced-size" ↔ links-lateral

Kinderlebertransplantation

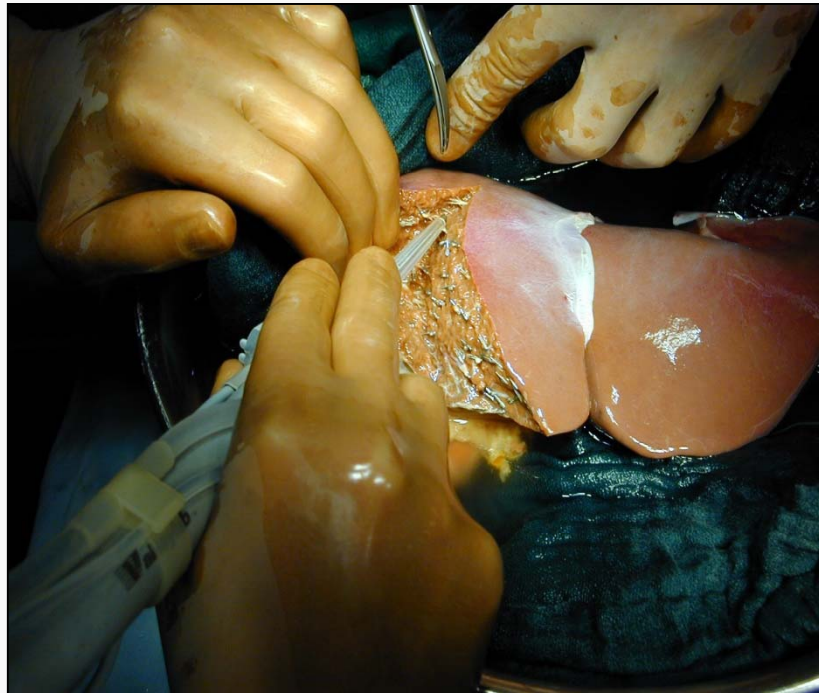


rechts ↔ links

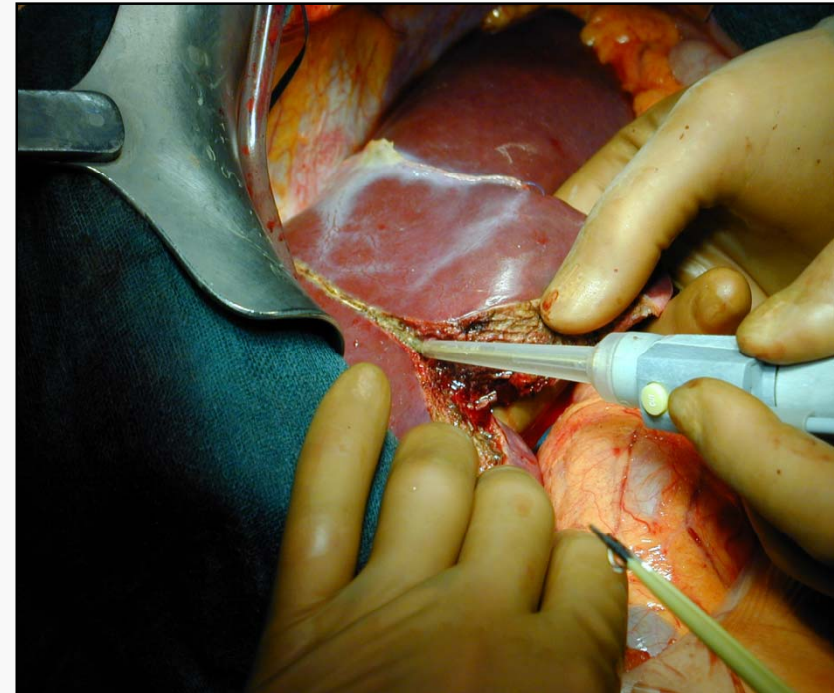
Erwachsenentransplantation

Split-Lebertransplantation links-rechts Entnahme und Koordination

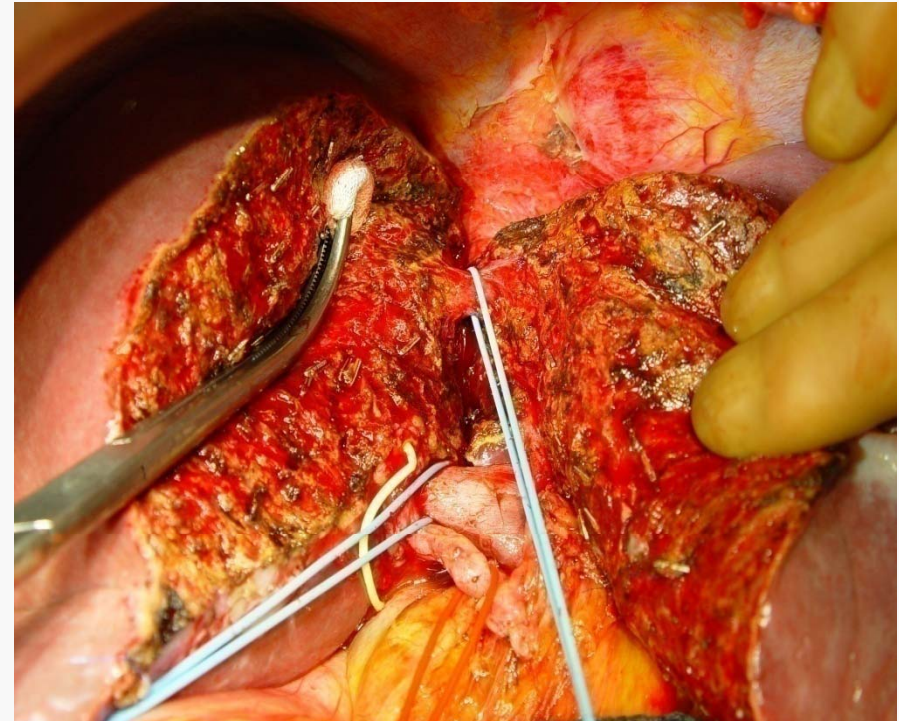
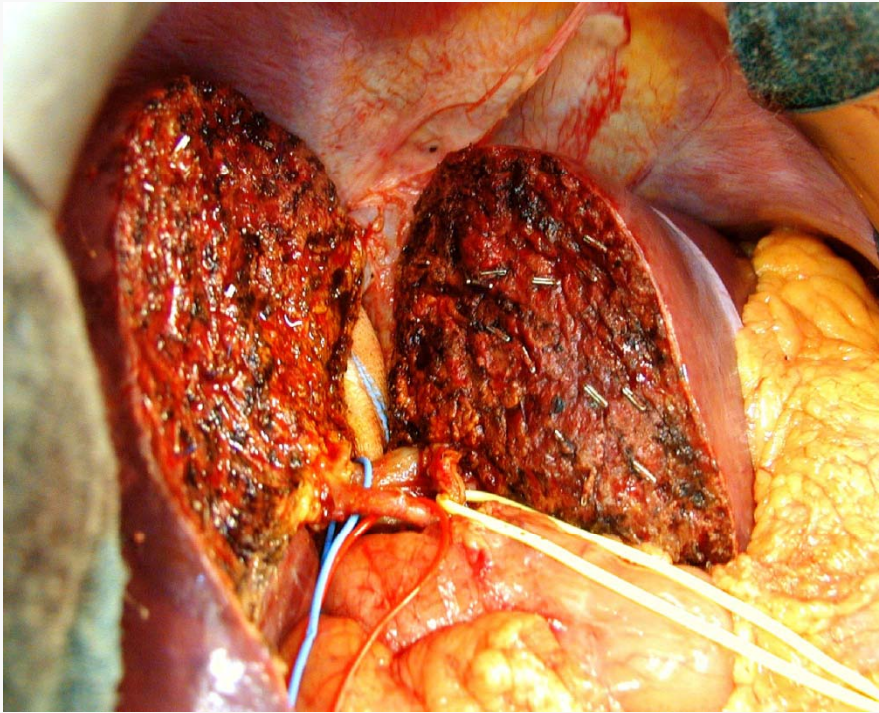
Ex-situ



In-situ



Lebendspende - Lebertransplantation



Postoperative Komplikationen - Spender Lebendspende des rechten Leberlappens

	Europa N=299 12/2001	USA N=449 01/2003	Asien N=561 02/2003
Keine Komplikationen	191 (66%)	384 (85.9%)	404 (72%)
Komplikationen	98 (34%)	65 (14.1%)	157 (28%)
Galleleck	17 (6%)	27 (6%)	34 (6.1%)
Gallengangsstenose	6 (2%)	-	6 (1.1%)
Leberinsuffizienz	40 (14%)	-	41 (7.3%)
Lungenembolie	3 (1%)	-	3 (0.5%)
Gefäße	1 (0.4%)	-	3 (0.5%)
Infektion	12 (4%)	5 (1.1%)	28 (5%)
GI	8 (3%)	-	13 (0.7%)
Death Früh	3 (1%)	2 (0.5%)	0
Spät	1 (ALS)	1 (Suizid)	1 (unbek.)
LTx des Spender	1	2	1

ELTR - database 12/2001 / Brown et al. NEJM 2003; 48: 818-25

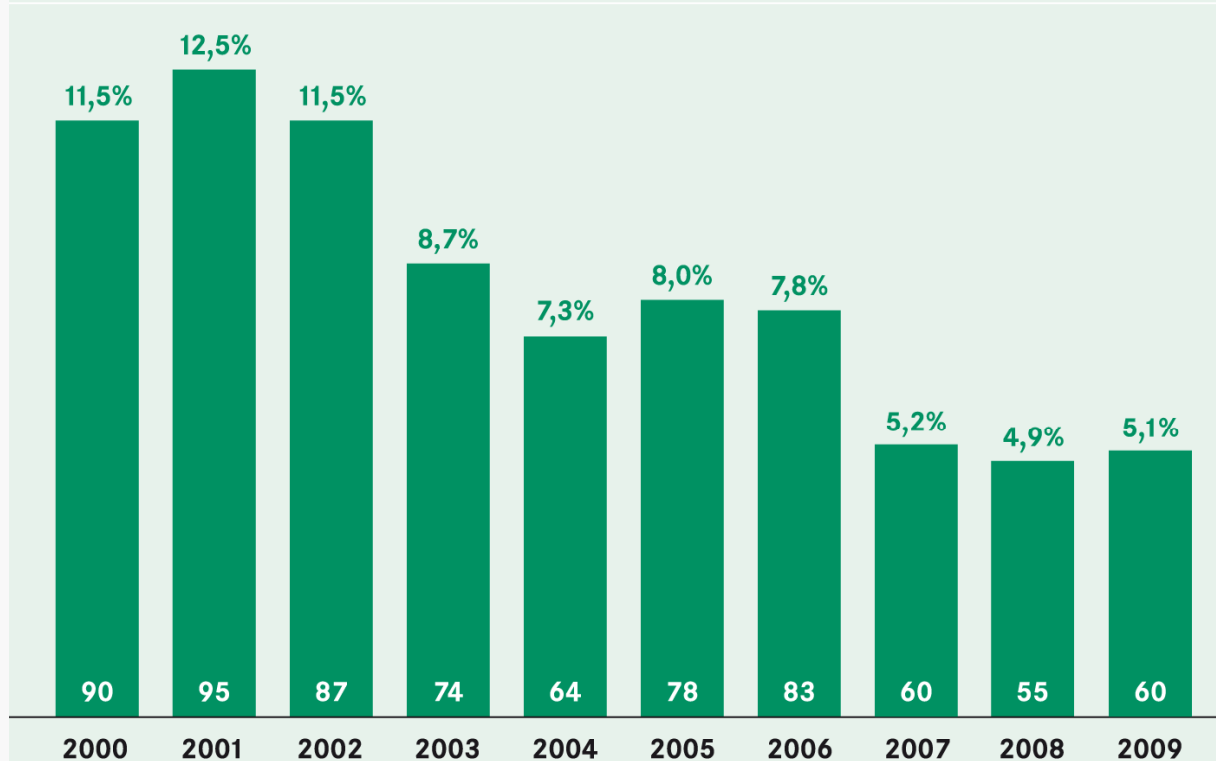
Lo et al. Transplantation 2003; 75: S12-S15

Lebenspende - Lebertransplantation

2009 DEUTSCHLAND

Anteil der Teilleber-Lebenspenden* an der Lebertransplantation

ANZAHL, PROZENTUALER ANTEIL

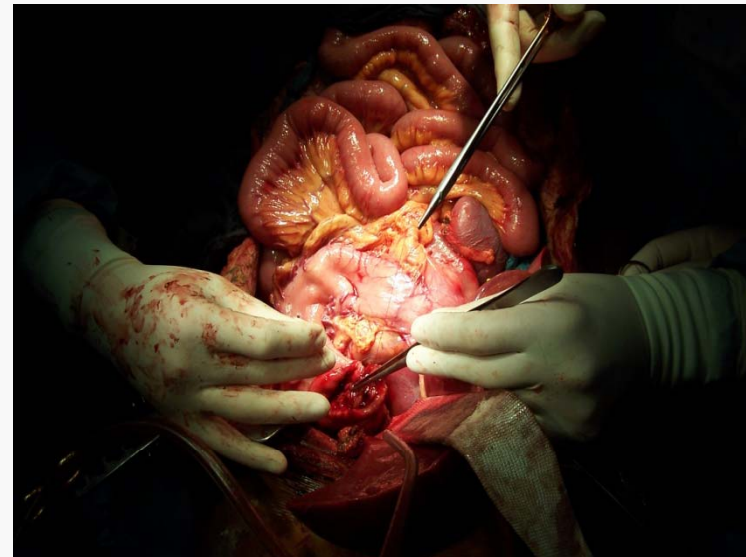
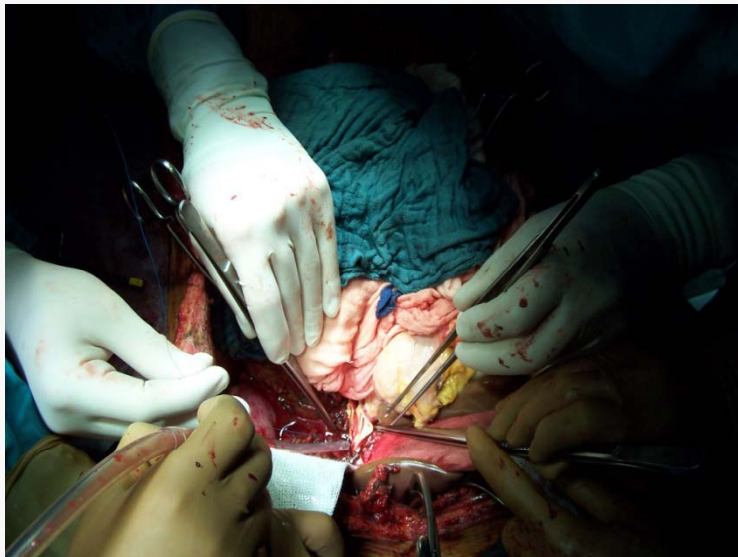
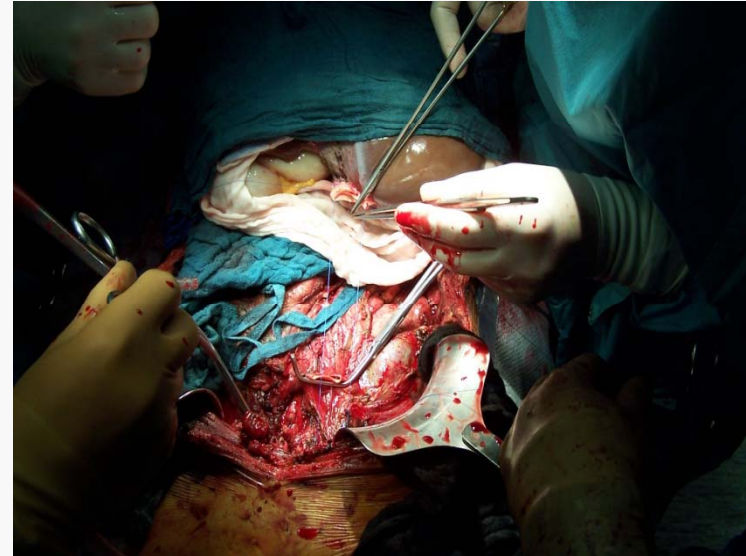
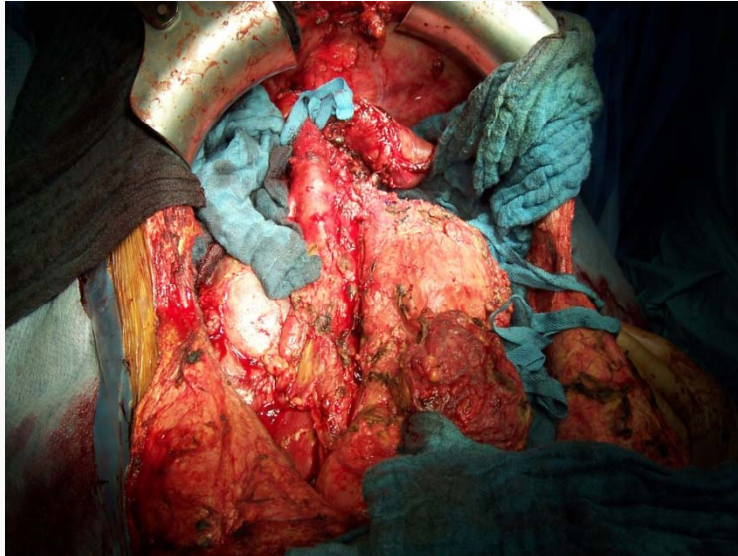


Bis einschließlich 2001 sind die Domino-Transplantationen in den Lebertransplantationen nach Lebenspende enthalten.

*Quelle seit 2001: Eurotransplant

DSO 54

Multiviszeraltransplantation



Anzahl der Organtransplantation in Deutschland 2009

	2009 Tx	Anzahl der Zentren	Tx > 100	Tx 50 - 99	Tx 25 - 49	Tx 10 - 24	Tx < 10
Herz	347	25	-	1	4	7	13
Lunge	272	16	-	1	-	7	6
Leber	1118	22	2	8	6	2	4
Nieren	2275	43	2	17	13	7	4
Pankreas	117	25	-	-	1	-	24